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Keith & Blackman Co.
Kinnell, Chas. P. & Co., Ltd.
Murray, S. D. & Co., Ltd.
Rosser & Russell, Ltd.
Sturtevant Engineering Co. Ld

Wall & Ceiling Covering—
Beaver Board Co., Ltd
Fiberlic
Machin & Kingsley, Ltd.
Thames Mills (Calne)
Venesta, Ltd.
Young & Marten Ltd

Waterproofing—
Adamite & Co., Ltd.
Callender, G. M. & Co.
Ebner, J. F.
Korner-Greenwood & Co. (Pudlo)
Torbay & Dart Paint Co.

Wine Bins (Iron)—
Bayliss, Jones & Bayliss, Ltd.
Farrow & Jackson

Wire Screens—
Parker, Winder & Achurch

Window Frames & Sashes
Braby, F. & Co Ltd.
Carron Company
Clark, Hunt, & Co. Ltd.
Haywards, Ltd
Williams & Williams, Ltd.

Wood Flooring—
Acme Flooring and Paving Co.
Improved Wood Pavement Co.
Turpin's
Zeta Wood Flooring Co.

Wood Preservative—
Fuller, John H. & Co. Ltd.
Maclean Wm. Sons, & Co.
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WORKERS IN WOOD

OAK PANELLING £1,000 PER MILE

ENQUIRIES SOLICITED FOR HARD AND SOFT WOOD

JOINERY

THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXIX.—No. 4040 JULY 9, 1920

RESEARCH AND OUR HISTORIC BUILDINGS.

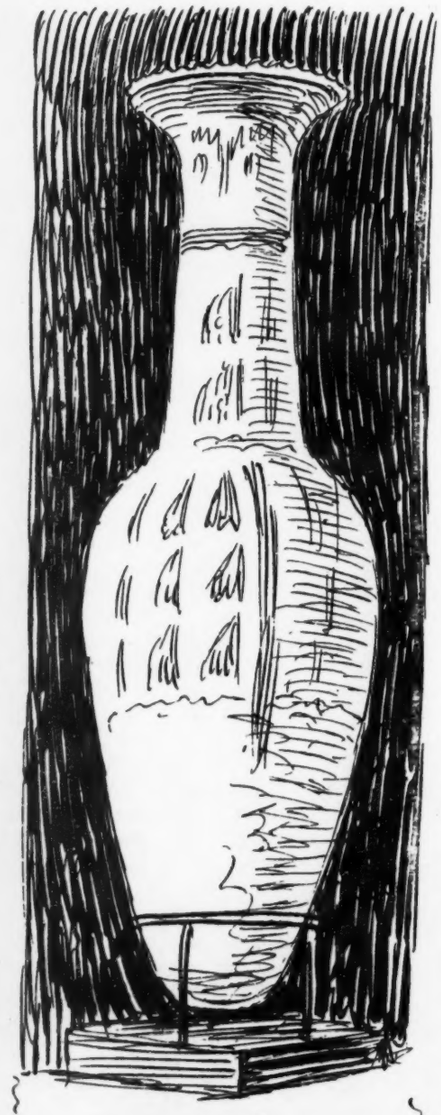
At a time when popular interest and feeling is very much stirred by appeals on behalf of the preservation of one of the most, if not the most, cherished of our national buildings, it is fitting to consider whether the great volume of knowledge in the realm of what is usually called "pure science" is being devoted to the valuable practical ends of combating the inevitable ravages of time. Our great sanctuary is not only of intense interest as representing the reverent work of many different periods, each with its own history of architectural evolution and of ecclesiastical and public effort, but it is also the shrine of those who have made England what she is. It would be little short of disastrous to allow the Abbey to reach such a state of crumbling decay that anything in the nature of restoration in the ordinarily accepted view of this word should prove necessary. Fortunately, this stage has not been reached. The problem, as we understand it, does not resemble that which had to be confronted at Winchester or St. Paul's—it is not a question of vast schemes of underpinning or of increasing stability by pumping liquid cement into frail piers. This is a matter of external local decay, simpler, in that it does not call for any great engineering devices, but more insidious because of its gradual and continuous onslaught. The cold man of business may feel inclined to designate the requirements as "annual repairs" and suggest that those responsible for the structure should have done more in the past and then kept pace with the inroads of external influences, but this is not a fair aspect of the matter. The condition of a large industrial concern cannot be applied to a building like the Abbey. Ordinarily, it is true, a suitable sinking fund to meet depreciation would be an essential of any prudent custodianship, but the funds of the Abbey are limited, and the great fabric with its vast area of stonework exposed to the weather, exposed not merely as ordinarily walling, but in a multitude of buttresses and pinnacles, would call for a repairing outlay far in excess of any normal requirement, even were the material suitable for its environment. In this case, however, the stone is not suitable and this brings us to the question we wish to raise. In an instance of this kind it is no use blaming those who in past centuries decided upon the use of a soft calcareous stone unsuited to our present London atmosphere. Were they arraigned they would have a complete answer in that the environment has changed and could not have been anticipated when this great church stood, even in its latter day glories as known to us, in the comparatively innocuous atmosphere of the then small town, the air of which was relatively innocent. It may be that we have reached a maximum of pollution and that with curtailment in the use of raw coal, the depredations on the stonework of our cities will decrease, but any such diminution must be gradual, and in looking to the future it would be foolish to rely on more kindly atmospheric treatment since we are still a long way off municipal heat supplies with all the advantages and economies they would entail.

While there are other agents which lead to stone decay, such as frost, expansion in the formation of ice causing fracture, coal is undoubtedly the great enemy. Every ton of coal contains on an average some 67 lb. of sulphur, which, when burnt, forms a gas, and this in the presence of air and moisture, is turned into surphuric acid, or vitriol. Every million tons of coal burnt will produce some 30,000 tons of this acid, so that the annual atmospheric output of Greater London must approach some half-million tons, a great part of which descends upon us in rain and fog. An immediate chemical action results between this acid and any calcareous stone, resulting in the formation of soluble products, not, however, soluble enough to be at once washed away, but which cake as a soft and absorbent mass upon the stone where this can lie and this leads to further decay. Chemistry, however, is not the only science concerned in weathering, for stones differ greatly in their resisting powers owing to variation in physical structure. Thus Bath and Portland stone differ but slightly in chemical composition, but greatly in weathering properties. Professor Lethaby is employing Portland stone in his repairs. He keeps to safe ground and, of course, must confine himself to material which will blend in texture and colour with that he removes; but the use of Portland stone is merely based on lay experience and not on any scientific principles. When the Chapter House was restored, Chilmark stone—a limestone containing some 10 per cent. of silica—was employed. The truth of the matter is that these problems—problems involving h ndreds of thousands of pounds—have never been studied. Our petrologists and geologists complain that their work is not appreciated by the public. Here, surely, is a fruitful field, the investigation of which will bring them the recognition they desire and undoubtedly deserve. The sceptic will deride and recall the Royal Commission on the stone for the Houses of Parliament, the collection of stone samples and microscopic sections, which can still be seen, and the unfortunate outcome; but much has passed since those days. Petrologists, however, spend their time among the more interesting (to them) but much less important class of granitic stones. We want a complete investigation of our ordinary building stones, chiefly by the physicist and petrologist in relation to their use in different situations, and we want the information brought down from the high plane of the scientific expert to that of the man who has the responsibility for selecting and using the material. Here, indeed, is a subject worthy of research, and we feel sure that architects would co-operate by telling our men of science exactly the kind of information which would prove most useful. We recall many years ago a paper read, we think before the Architectural Association, which resulted in the initiation of some weathering tests on building stones by the Geological Survey authorities, and from a recent leader in *The Times* we hope we may infer that these tests are still in progress; if this is so, the time seems ripe for at least some interim report on the subject. We have a splendid collection of building stones presented to the Woodwardian Museum at Cambridge under the direction of one of our most able geologists, Professor J. E. Marr. We possess in London a great enthusiast for the cause of science in the national interests in the head of the geological department at the Imperial College, Professor W. W. Watts. At Jermyn-street the Curator, Mr. J. Allen Howe, is very much alive to the value of economic geology, and, lastly, we possess an Industrial Research Department. Why cannot one or more of these centres seriously take up this important matter? The R.I.B.A. possesses a Science Committee which we feel sure would be willing to co-operate.

NOTES.

Westminster Abbey.

WITH much that Mr. Frederic Harrison has to say in his letter to *The Times* on Westminster Abbey there will be complete agreement, but he can hardly expect endorsement of his suggestion that in the work of repair at the Abbey there is no need even of an architect! The work, he says, should be entrusted to an engineer, and that is where we join issue with him, even though he adds: "An engineer trained to great reconstructive works with orders to do nothing but to make the building safe for a generation or two." Great as our admiration is of the skill of the engineer, we cannot admit that anyone but an architect is fitted to deal with the problem, and certainly no one is better fitted than the present architect to the Abbey to carry out the repairs so urgently needed. Why does Mr. Harrison drag in the Parthenon and the Colosseum? Does not this show an entire misconception of the problem? The Abbey is in present-day use as a place of worship and must be kept in repair for this reason.



Highlands
Ecuador
Lent by Lord Murray of Elibank

[The sketches on this and the next page are from the Exhibition of American Indigenous Art at the Burlington Fine Arts Club. A notice of the exhibits appeared in our issue for June 11, page 682.]

The R.I.B.A. Final Examination.

WE may call our readers' attention to Prof. Reilly's remarks in this issue on the notable departure in educational methods which the Council of the Institute have made in exempting students of the A.A. and the Liverpool School of Architecture from the final examination. There appears to be no valid objection to this decision, which may be a big step forward in architectural education and may result eventually in giving to architectural education the same academic standing and dignity that is given in educational circles to Law and Medicine.

"Recognised" Schools of Architecture.

THE following resolution of the Council of the R.I.B.A. on the subject of the status of the teachers in schools of architecture appears to be reasonable: "On the recommendation of the Board of Architectural Education, the Council of the Royal Institute have passed the following resolution—That no Professor or Master of a 'Recognised' school should be debarred from general practice."

The Empire Timber Exhibition.

WE are doubtful whether architects find time to take the full amount of interest in the timber industry that they ought to, and we could wish special invitation had been extended to architects to attend the opening ceremony of the Empire Timber Exhibition at the Holland Park Skating Rink on Monday. A wonderful collection of timber samples is there shown, as well as articles manufactured therefrom; and the exhibition is convincing proof that we have within our great Empire timber of quite enough variety to suit all our possible needs. The pleasure is to find it is available in quantities and at prices one can do with. We should especially like to see a much wider application of wood for lining the walls of our houses (even for cottages), both for cleanliness and durability; and we wish every success to those who can bring about an adequate supply in a practicable form. Too frequently the architect meets with insuperable difficulties in the adoption of new materials or new adaptabilities. At all events, the war has taught us this, amongst much else, that it is an imperative study to make

British Honduras
lent by Liverpool Public Museum

our Empire self-supporting in the matter of timber as well as other things. Capital speeches were made by H.R.H. Prince Arthur, Lord Selborne and Mr. Kellaway at Monday's ceremony.

Housing Administration

THOUGH they already have an architect and an engineer the L.C.C. think they must have further official help in regard to housing development, and proposed the appointment of an administrator of that work. As it appears necessary that he should have knowledge of the Council's methods, it is agreed that the appointment be given to Mr. G. W. Humphreys. It is, perhaps, only to be expected that criticism should be directed against the decision to give £2,000 a year for official duties to an official who is already in receipt of a similar amount of full-time salary for (presumably) full-time duties. However, the appointment is now made.

Building Adventurers.

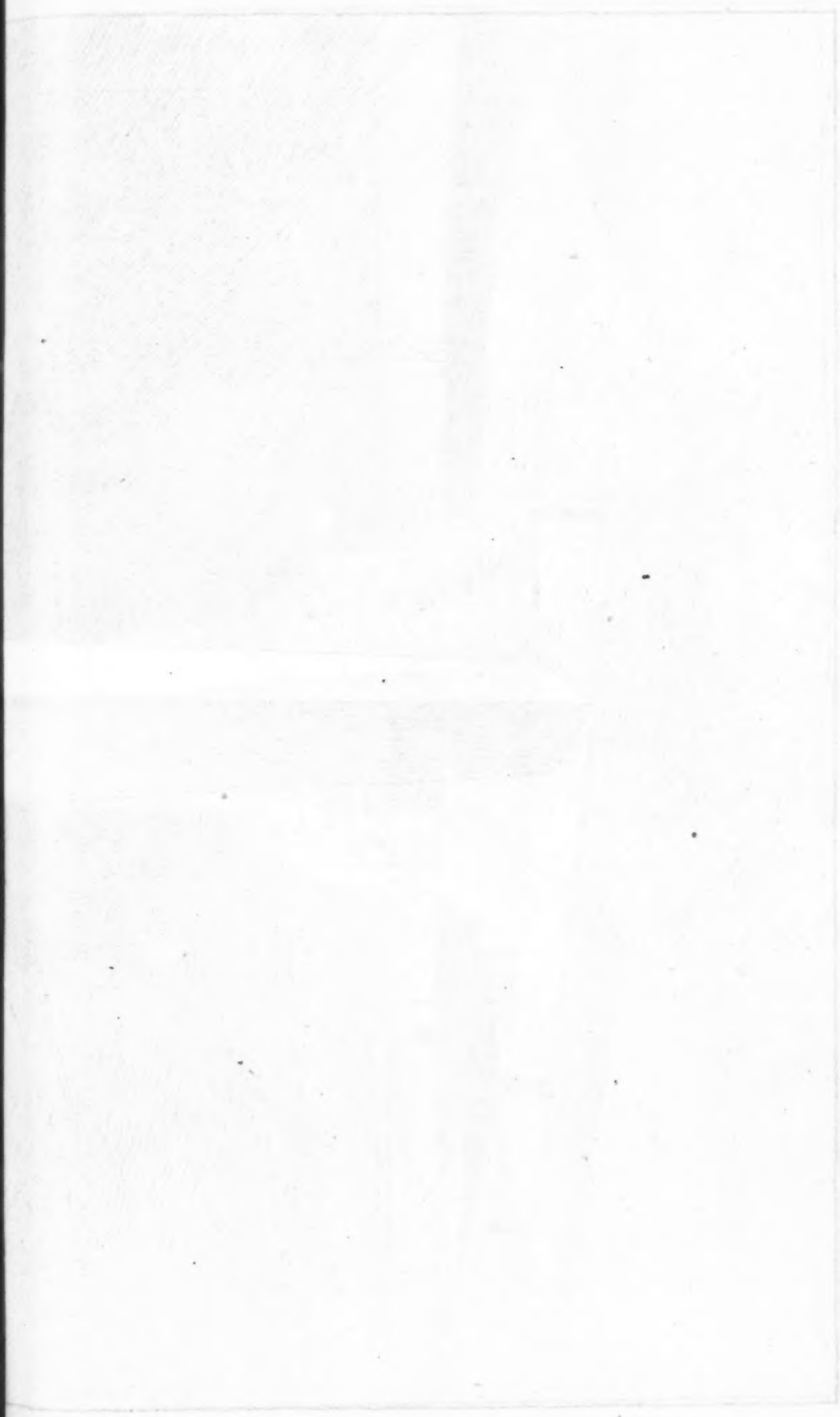
THE "jerry-builder" has been well anathematized as to his former housing exploits, but never has he done worse than we saw in some cottages going up the other day with slender joists resting on a half-inch thick wall plate, and the landing trimmer joist with ⅜-in. fillets nailed on to receive the landing joists, and two thin slabs of coke-breeze with a cavity for the outer walls! These cottages will, perhaps, find tenants; but we hear of five new houses at Hanwell which can neither be let nor sold, for the Rent Restriction Act limits the rent to £40, whilst many would take them at £60, which is an economic rent.

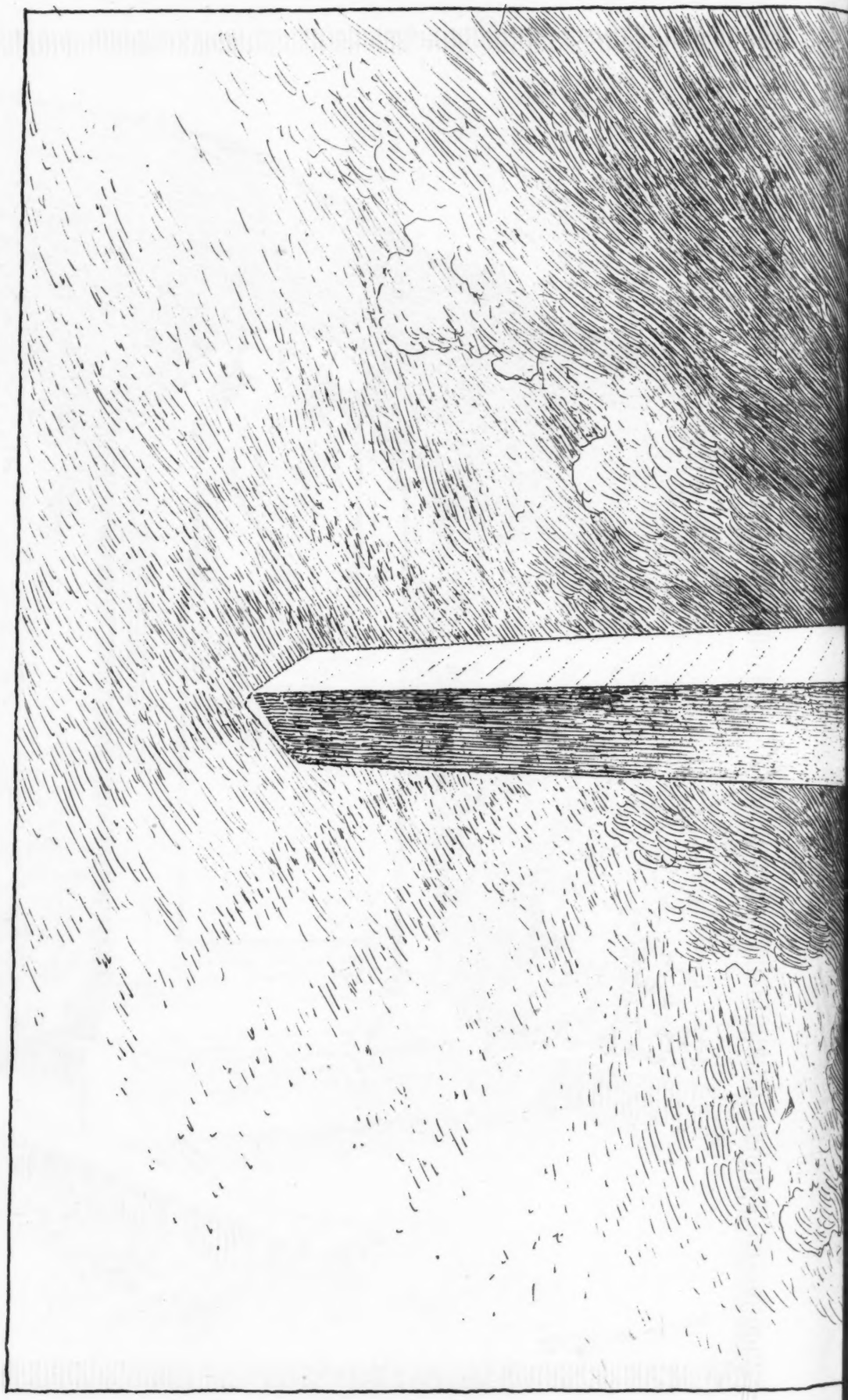
City Development.

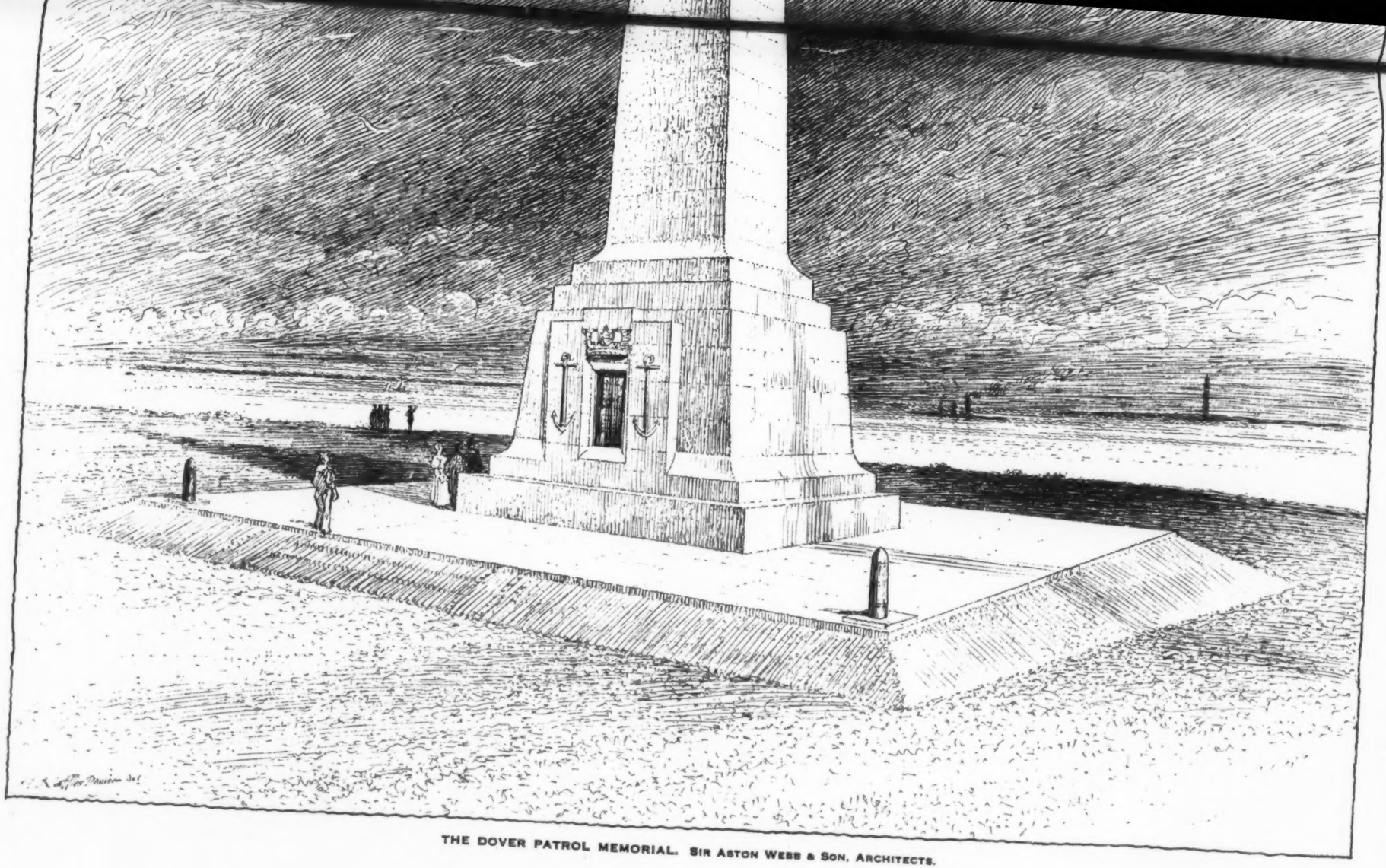
NOTWITHSTANDING all our commercial difficulties, the City Developer proceeds with his work. The Pearl Insurance buildings are now disappearing, ready for a new structure; and the site behind King William's statue is in the hands of the builders. Thus are barriers to fresh City improvements steadily accumulating. For years past we have been talking about what could be done to improve in a worthy way

IN MEMORIE
FAITH · HOPE · LOVE AND THE
GREATEST OF THESE IS LOVE
TO THE HONOURED MEMORY OF MAXWELL
THIS STONE IS INSCRIBED BY THE

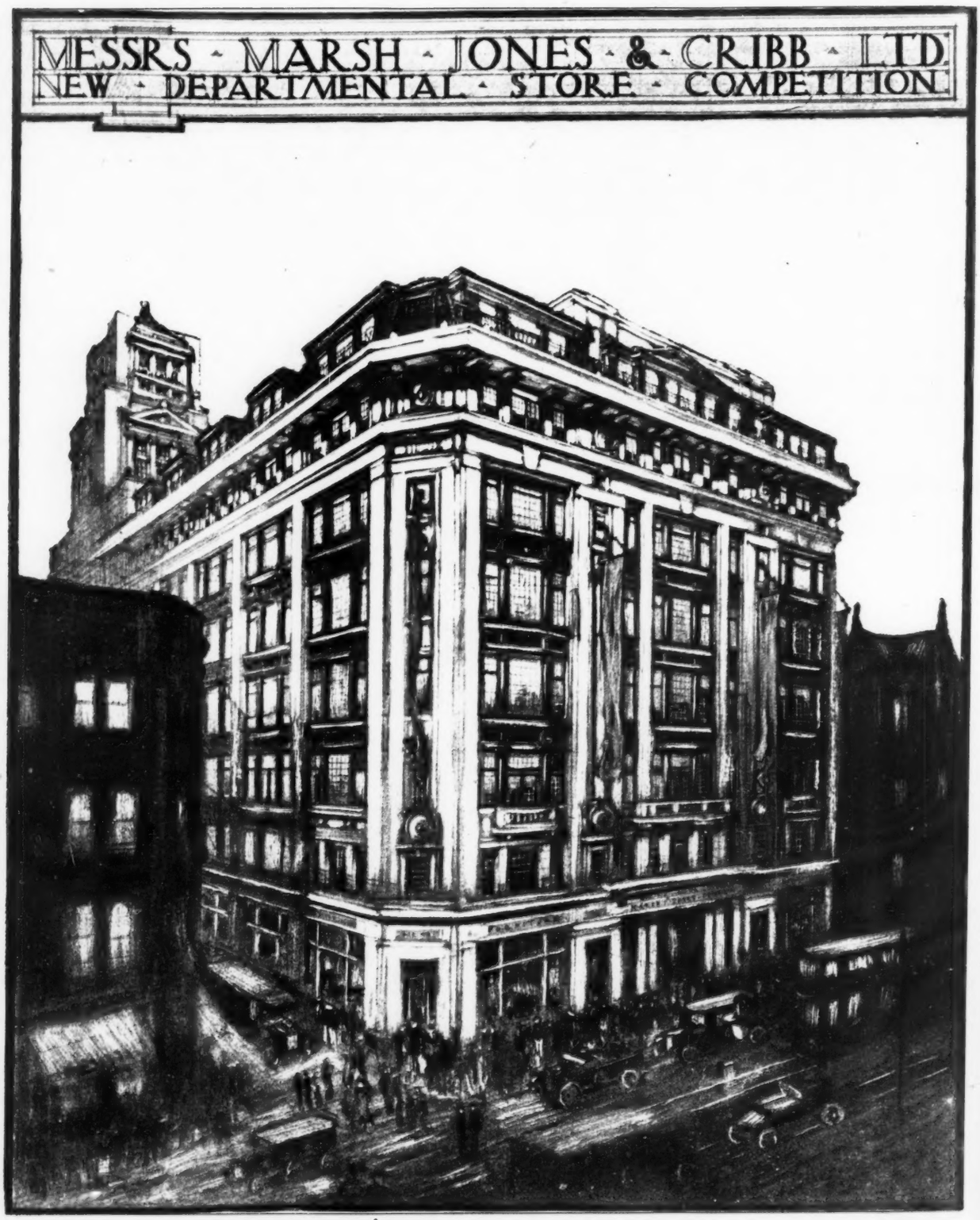
MONUMENT AT ARROCHAR. MR. T. L. WATSON, ARCHITECT.



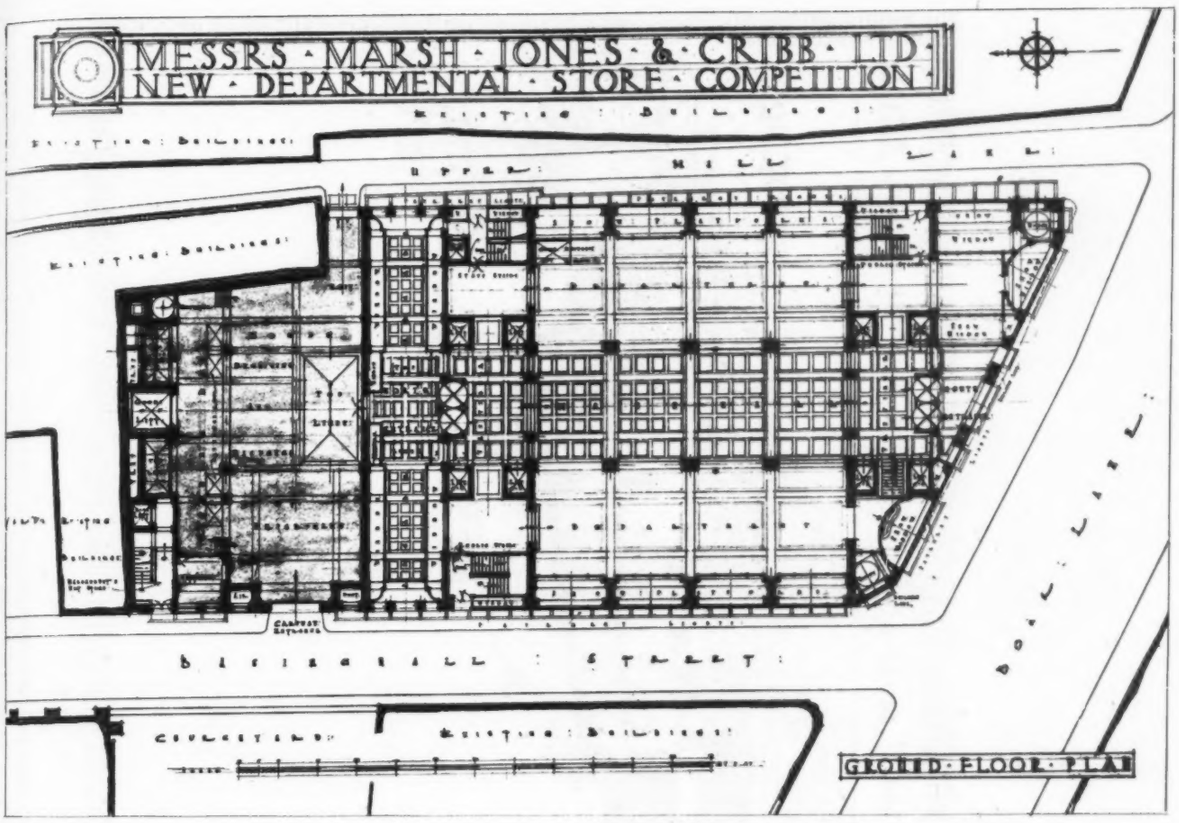


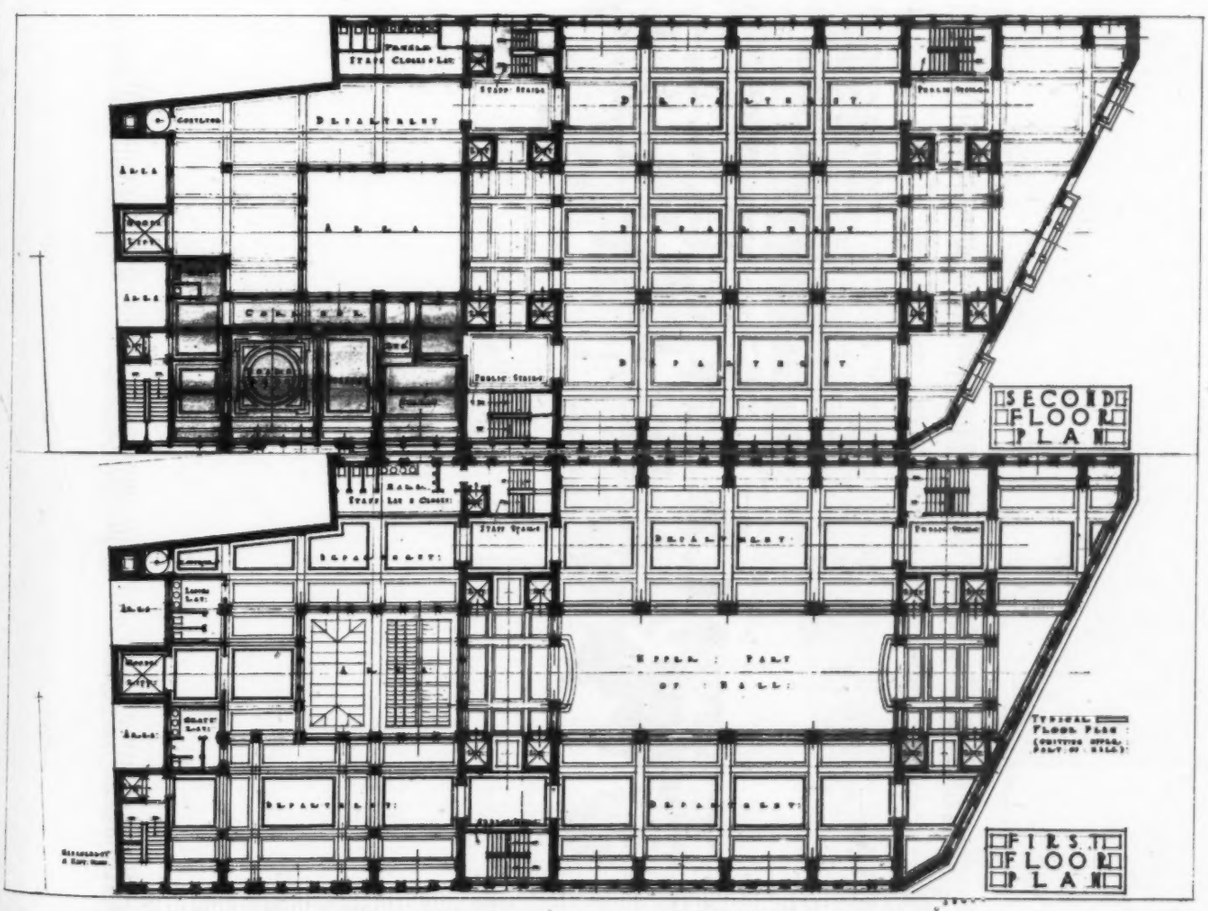


THE DOVER PATROL MEMORIAL. SIR ASTON WEBB & SON, ARCHITECTS.

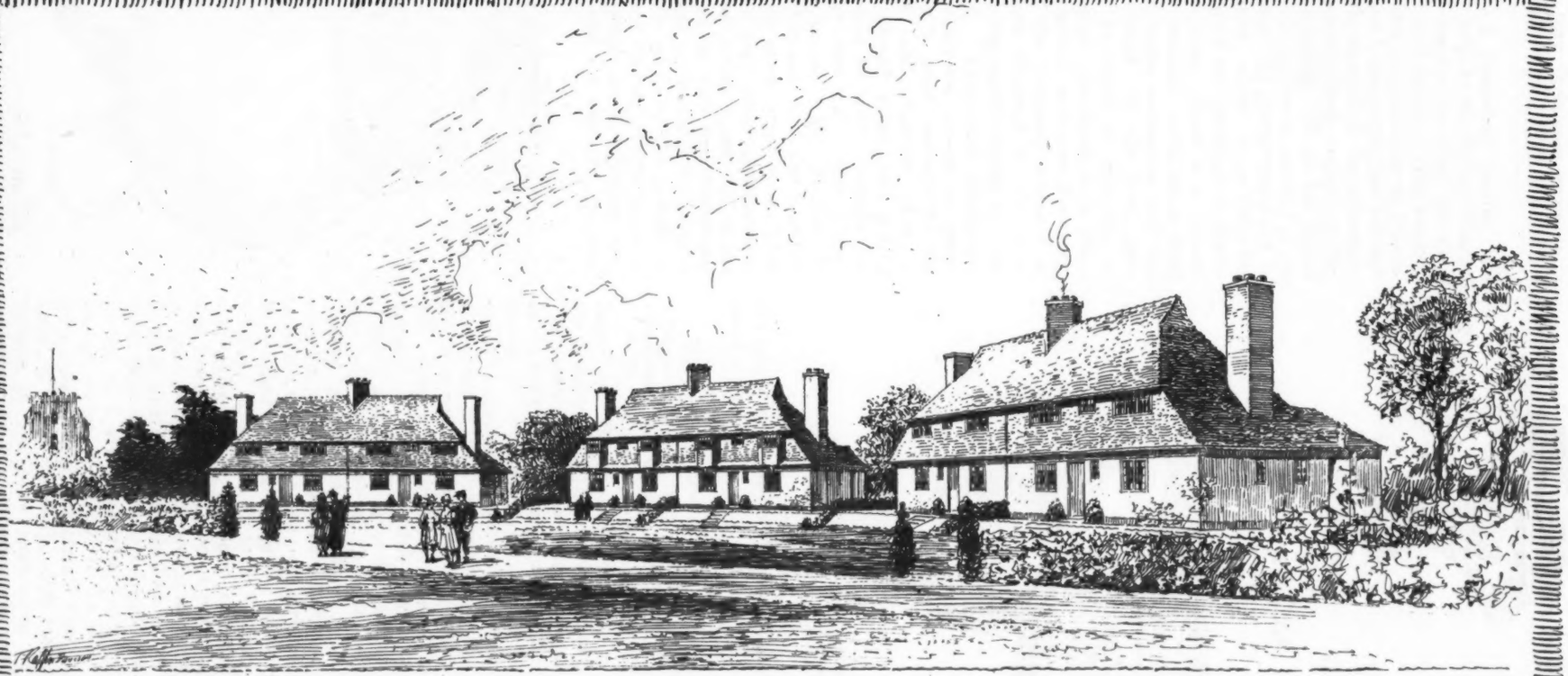


COMPETITION FOR NEW BUSINESS PREMISES, LEEDS. FIRST PREMIATED DESIGN, BY MESSRS. CACKETT AND BURNS DICK.





COMPETITION FOR NEW BUSINESS PREMISES, LEEDS. FIRST PREMIATED DESIGN, BY MESSRS. CACKETT AND BURNS DICK.



Saint Osyth-Houses on Bury site for the Tendring R.D.C. Amian & Champneys Architect 3 Southampton St Strand W.C.

this London Bridge area. In the meantime, the City Developer proceeds in his own way.

"The Perfect Citizen."

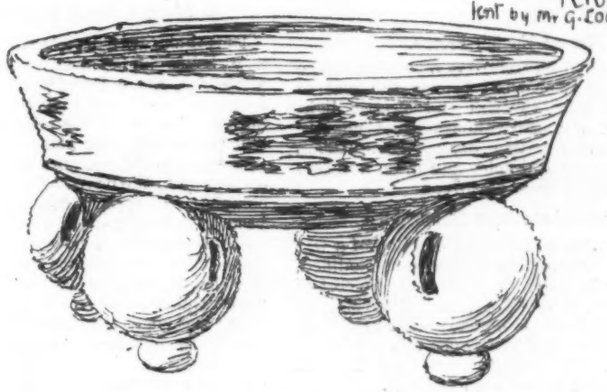
A PAMPHLET bearing this title, by Mr. Halsey Ricardo, reaches us from the Civic Arts Society. The awakening of a more definite sense of citizenship is so much needed that we welcome any remarks directed to its encouragement, especially from artists of Mr. Ricardo's standing. If we feel bound to criticise, it is more on account of the manner than the matter contained in the pamphlet, which is a little too much removed and doctrinal to stimulate at this time. There is a flavour of the old perished world rather than of the new births around us, and this chills the mind. If the Civic Arts Society is to effect an influence, it must get more into touch with life—with less doctrine, and more discovery. We quote the following sentence as showing how involved is the style, from which the mind receives no clear impression: "This stolid indifference to what is around us out of doors accounts in a great measure for the slovenliness and disorder that is allowed to prevail there, and getting so accustomed to move amongst, we get the conviction that it must always necessarily be so." Mr. Ricardo, in speaking of genius as "the foam on the crest of some great wave," has fallen into a very usual misconception of its nature, which is not that of the foam, but of the rock that withstands the wave, and upon which the wave is broken. To complete the picture of "the perfect citizen," there must be less detachment, more mingling with the earth and the common life, and the fullest knowledge of the conditions which surround it.

Alta Vera Paz
Guatemala
lent by
Mr C.R. Fenton

Pottery, Tripod and Vase.

Truxillo Region
Peru
lent by Mr G. Lockett

Nasca Valley
Peru
lent by Mr G. Lockett



British Honduras
lent by Liverpool Public Museums

The Danger of Sentimentality.

AND this is just what is absent from the pamphlet. We respect Mr. Ricardo's aim, but does there not linger through the text something of the detachment of the superior person? The author condemns so much, and yet in the same breath condemns disapprobation as "impertinence." Nor is he watchful against sentimentality, a form of unreality which is peculiarly dangerous at the present time. We must not deceive ourselves. A modern warship is not beautiful, nor is a "tank," and to mix up perfect citizenship with this sort of thing is only looking deeply into millstones. The evolution of beauty will not be furthered in such a way. The will to beauty will be reached by the deepening of our religious intuitions so that we may distinguish better, and recognise the true from the false. To set an example of perfect citizenship we must first know in what it consists, and we do not think that the writer has succeeded in giving us a statement comprehensive enough to see it whole. If the Civic Arts Society were less certain that it knew, it would, we think, effect more, because it would be more open to influences which could enlarge its outlook. For these new societies tend too much to the formation of groups only reflecting their own opinions.

Public Rights.

IN the June issue of the *Journal* of the London Society Mr. H. J. Leaning puts forward a plea that all public amenities and treasures, particularly the City churches, should be preserved for all time by Act of Parliament, and urges that a strong public movement should be promoted to secure this object. "The theory that a man may do what he likes with his own is universal," he says, "but in England it is supreme. . . . This spirit of individual freedom makes it possible within certain limits for one owner seriously to injure his neighbour's property by making his own hideous or squalid by erecting shanties, high walls, &c., . . . but the wise owner soon realises that from mutual restrictions he gets as much as he gives. In this way we get certain areas dedicated to residences only, and others to business premises, and thereby order and security of enjoyment. . . . Already many say that although the inside of a man's house is his own the outside is not, as the public has a right to prevent him from defacing the streets with bizarre elevations or hopelessly bad 'ornaments,' and argue for a Committee of Public Taste to decide what shall be allowed. This control will no doubt in civilised communities be extended to cover the purposes to which land within town limits is to be devoted until at last the public get complete control over he development of their cities."

GENERAL NEWS.

Professional Announcement.

Mr. Geoffrey C. Wilson, A.R.I.B.A., has joined the firm of Messrs. Bourchier, Tatchell & Galsworthy, of 25, Queen Anne's Gate, Westminster. The title of the firm will remain unchanged for the present.

The Memorial Hall.

The Memorial Hall, Farringdon-street, E.C., which was put up at auction last week, was withdrawn, as the reserve price of £175,000 was not reached. The bidding went up to £150,000.

Furness Abbey.

The Barrow Corporation has been informed that the Commissioner of Works wish to obtain control of the Furness Abbey ruins as an ancient monument of national importance. Extensive repairs are contemplated.

Fire at Nostell Priory.

A fire occurred on Saturday afternoon in the tapestry room at Nostell Priory, the seat of Lord St. Oswald, through the electric light wires fusing, and many thousands of pounds' worth of damage was done. An Italian cabinet of ebony and gold, and large numbers of fine tapestries were destroyed.

Birmingham War Memorial.

The original scheme for the erection of a war memorial at Birmingham is now to be modified, and a memorial hall is to be erected at a cost of about £35,000, or about one third of the original estimate. The site is on the corner of Broad-street and Easy-row, in an open space laid out as a garden. The projected new City Hall will later be erected on an adjacent site.

Scientific and Industrial Research.

Professor Sir John Cadman, K.C.M.G., D.Sc., University of Birmingham; Mr. W. B. Hardy, Soc. R.S., Gonville and Caius College, Cambridge, and Professor Sydney Young, D.Sc., F.R.S., Trinity College, Dublin, have been appointed by an Order of Council dated June 24, 1920, to be members of the Advisory Council to the Committee of the Privy Council or Scientific and Industrial Research.

University College, London.

The work of the Session 1919–20 in the School of Architecture at University College was brought to a close on Friday, July 2. The Donaldson Silver Medal, presented by the Royal Institute of British Architects, was awarded to Mr. W. C. White-Cooper; the Trevelyan Goodall Scholarship was renewed for the second year to Mr. B. L. Sutcliffe. The Lever prizes were awarded as follows:—First Prize in Architecture, Mr. H. F. Butcher; First Prize in Town Planning, Mr. H. F. Butcher; Second Prize in Town Planning, Mr. A. G. Waller. Architecture Certificates were awarded as follows:—Messrs. L. C. Brooks, H. Clark, A. R. Dent, S. Hyde, A. G. Macdonald, R. C. White-Cooper. Town Planning Certificates were awarded as follows:—Messrs. S. C. Foulkes, W. H. Thompson.

Restoration Work at Ancient Abbeys.

During the work of restoration and excavation now being undertaken at Rievaulx Abbey, Yorkshire, the relics of some saints have been found in two small caskets under one of the altars. The Office of Works began work on the Abbey shortly after the Armistice, and good progress has been made. The excavation carried on in the nave has shown the piers to be complete in number, although in each case the base has been shattered. The outlines of the various chapels can now be clearly traced, and some of the altar stones still remain. Work is also being done at Fincale Priory, Durham, where the walls of the south transept and the structure generally have been repaired and dangerous portions of masonry temporarily shored up. At Tintern Abbey some portions of the walls have been strengthened, particularly the walls of the tower, and similar work is well in hand on the west wall and nave. The restoration work at Framlingham Castle, Suffolk, has presented some difficulties, but good results have been achieved. All the ivy has been removed, and the very large fractures which were revealed in the towers are being secured, although the flaking of the stone has caused much trouble. Excavation is proceeding at the sally-port, and the line of the old walls has been exposed.

COMPETITION NEWS.

Secondary School, Houghton-le-Spring.

The Assessor (Mr. F. Willey, F R I.B.A.) has made the award as follows:—

First—Mr. R. S. Phillips and Mr. R. V. Taylor, Hucclecote, near Gloucester (No. 11). Second—Mr. J. Wilson Hays and Mr. Geo. H. Gray, North Shields and Wingate (No. 10). Third—Mr. W. Naseby Adams, 25, Ryder-street, St. James's, S.W. 1 (No. 2). Highly Commended—Mr. F. Quentery Farner, 1, Melbourne-street, Stalybridge (No. 8). Commended—Messrs. Stockwell, Wilkinson, Cremer & Woodgate, Stone House, The Quarries, Boughton Monchelsea, near Maidstone, Kent (No. 7).

Twenty-seven designs were submitted.

Sheffield.

For the City Council.—Designs for war memorial halls. Sending-in day, July 31. (See our issue for March 5.)

Gloucester.

For the War Memorial Committee.—Design for archway or gates to the public park, as a war memorial. Sending-in day, July 17. (See our issue for June 18.) The R.I.B.A. advises members not to take part in this competition until the conditions have been revised, and the Committee now announces that revised conditions will shortly be available.

Woking.

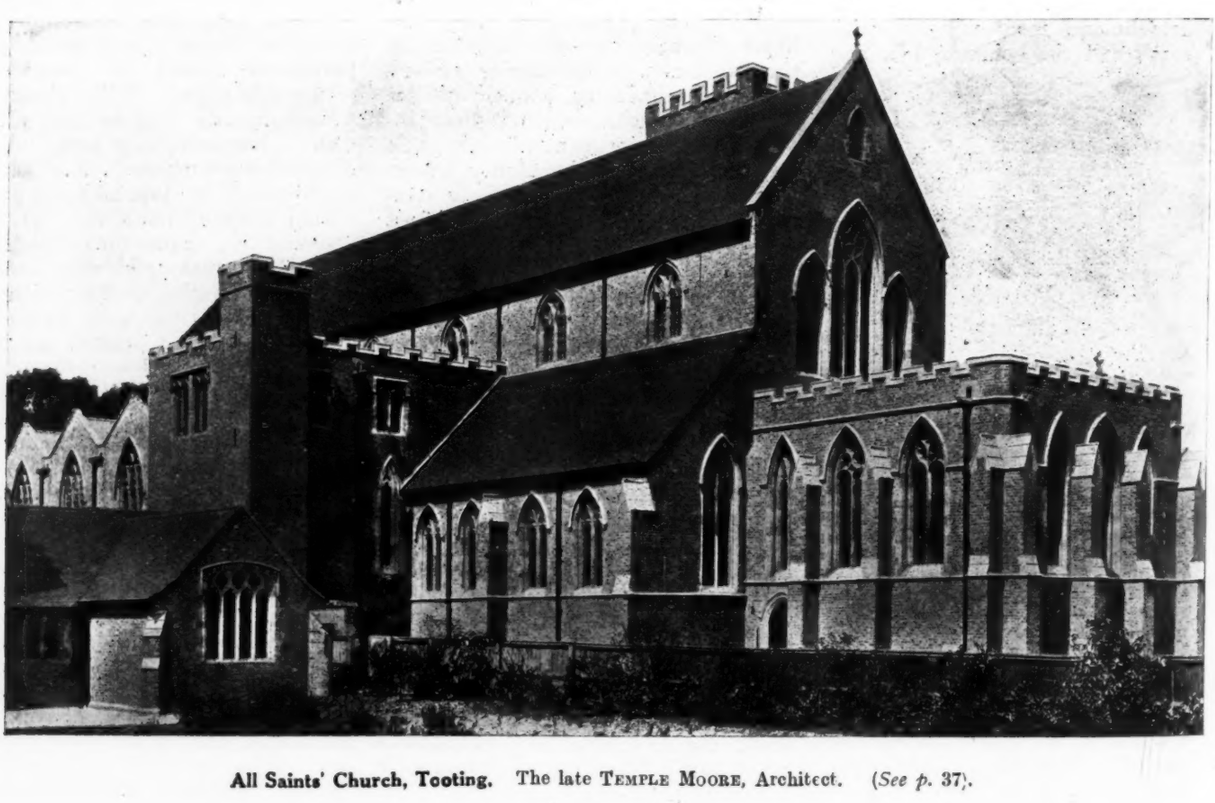
For the War Memorial Committee.—Designs for a war memorial to be erected in the public garden. Cost not to exceed £2,000. Premiums, 25 guineas, 15 guineas, and 10 guineas. Sending-in day, July 30. Further particulars from Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

Peterborough.

For the War Memorial Committee.—Designs for an infirmary. Sending-in day, July 31. (See our issue for April 9.)

The Board of Education.

Commencing July 12 the main offices of the Board of Education will be removed from the Victoria and Albert Museum to King Charles'-street, Whitehall, S.W.1. The official telephone is 9800.



All Saints' Church, Tooting. The late Temple Moore, Architect. (*See p.* 37).

CORRESPONDENCE.

Building Contracts.

SIR,—In your issue of July 2, on page 22, under the "Building Trade Section," Mr. Alan E. Munby's article, dealing with building contracts in America, contains the following passage:—

"The work of fairly adjusting accounts at present on the basis of price variations is enormous. . . . If this is to remain *permanently* with us, then we must have *an entirely new type of quantity surveying* which will give us *materials not in reference to erection, but as bought from the merchants.*"

I have italicised the points of importance, in my view, of this statement.

With regard to whether price variation will remain permanent or not, obviously, if the Federated Builders' Code is any sure guide, the only correct inference to this is—Yes! Then, it logically follows from his premises that an entirely new type of quantity surveying is both desirable and necessary. We were promised—at least it was indicated in the Code—that a National Standard Method of Quantity Surveying would be set up. For the moment we know not what this will be like, as it is non-existent.

As a quantity surveyor, may I be permitted to point out how complex and difficult our duties have become in the adjustment of price variations of materials and labour by the present method of quantity surveying? Indeed, the only way to adjust these variations is to depart therefrom, and to do as Mr. Munby has outlined, *i.e.*, to adjust the price variations for materials, not in reference to erection, but as bought from the merchant; and also to adjust the price variations for labour on time basis. This is the practice I have adopted when adjusting contracts based on the present or ordinary method of quantity surveying. Reasonable results may be obtained in this way, but it entails an enormous amount of labour and responsibility on the part of the quantity surveyor—more than he ought to be called upon to perform. It would seem inevitable that the Federated Builders must devise some new type of quantity surveying if they are to work their Code with any degree of success. I demonstrated (in my book on "Concise Costing for Housing," based on an improved system of quantity surveying), the possibilities of this, which I have since put into operation; and it has solved the difficulty. The keynote of this improved system is the separation of materials from labour, and materials expressed in the terms in which they are purchased from the merchants. The adjustment of price variations is, by this improved method, a very simple matter.

Under the last paragraph on the same page as that previously referred to, with reference to the Birmingham Contracts, it states therein: "A Schedule has been drawn up, which provides more detailed information for adjusting fluctuations in the cost of labour and materials . . . than could be found in a bill of quantities; and, in fact, *the absolute necessity for having access to the prices of materials on which the contractor has based his tender* . . . renders it a *necessary document, whether quantities are used for submission of tenders or not.*" It is clear from this that ordinary quantities are ineffective for the purpose, and creates the necessity for another document—Schedule of Prices. This, of course, entails duplication of work on the part of the contractor and, further, there will be two documents on a contract purporting to serve the same purpose, but irreconcilable. Now, this is, to say the least, confusing, and is altogether unnecessary. Bills of quantities prepared on my improved system serve both these purposes and require but one operation in pricing.

These particulars, I hope, may be of some service to your numerous readers, should they be in a like situation.

Manchester. T. SUMNER SMITH.

Ministry Housing Plans and Quantities.

SIR,—In reference to the letter in your paper last week upon the Ministry of Health Bills of Quantities at 3d. per set, I purchased for my information Nos. 183 and 189, naturally (?) expecting to obtain a model Bill, but, alas! the very first items to catch my eye as I turned the pages were:—

1. A clause referring the Builder to the Contract and Specification for a large proportion of the information which should have been in the Bill.
2. A single clause containing items for Plant, &c., Sheds, Notices, Licences, Fees, Insurances, Mess Room and Clearing Rubbish.
3. Brickwork split up into needless items.
4. No. 1 Staircase, 3 ft. 0 in. wide to rise 9 ft. 0 in., &c., and complete even to the handrail.
5. Lay on Gas to No. X points in so-and-so rooms.
6. No. 1 Hot water system and branches to so-and-so.
7. No. 1 Manhole size — x — x — all complete.

I stopped then, considering that for a cottage the Builders would rather have the Plans and Specifications than the Quantities to estimate from.

But who prepared these "Quantities"? Never a Quantity Surveyor.

WILFRID L. EVERSHED.

Westminster Abbey.

SIR,—I wonder if you dare be so unconventional as to publish the following reminder. We are witnessing a terrific hullabaloo about the decay of the Abbey. When, in the process of nature, material things decay, we scream like children at the ill-usage of Providence; but not a voice is raised against the vandalism of man when he hacks away the Abbey to put up his renaissance atrocities.

What respect for natural law, or the beauty that intuition has evolved, does this piteous outcry denote? Would it not be wiser to preserve with veneration that which we feel is beautiful, rather than destroy it and then cry out at the natural law, that clears away the old to make room for the new life? The fact is that man's conceit makes him regard with equanimity that which he will not tolerate from his Maker.

There is no real love of beauty at the back of all this outcry. Its real origin is in its furnishing food for journalism. C. F. A. VOYSEY.

Laying Bricks.

SIR,—In reference to the remarks made by "General Foreman," I cannot conceive it would be any good or cause any good to the workman of to-day to lay 2,000 bricks per day. We want houses, not ramshackles. Further, I consider it an impossibility at present, with the vitality of the people at such a low state. Half the so-called slackness, if looked upon in the right way, would, I think, be found to be mainly due to the war, and also to the low vitality of the worker due to the commodities (sometimes called food) which the working-man of to-day has to put up with. To a certain extent, this is the cause of restricted output, and not the unions—as overseers and employers try to make out.

I am not saying that I consider 100 bricks per hour average is fair; but don't try and blame the unions—blame the shortage of nutriment in present-day commodities and low value of the present-day fictitious paper money.

L. E. WHEBLE.

SIR,—I am pleased to see that Mr. Sharp wishes to explain; but to use an Irishism, "Everytime he opens his mouth, he puts his foot in it." I will take his explanations in order.

First.—He forgets he started the controversy by asserting that it is impossible to lay 800 bricks in eight hours on 9 in. walls.

Secondly.—He says he knew someone would tackle him, and he was prepared for it. I am afraid his replies to his critics are not very convincing.

Thirdly.—A *practical* builder would never make the mistake of calculating six tons when the weight should only be three.

He goes on to say, in reply to "London Bricklayer," "I cannot disagree with any of his statements." As "London Bricklayer" gives an average of 120 and sometimes 160 bricks per hour, I fail to see how the two can agree; and, therefore, he must disagree. He also asserts that the men who lay the bricks do not raise the quoins or corners. Well, during twenty years of practical bricklaying, I generally had to raise my own quoins, and they were reckoned as part of my day's work. He further states, "The quality is not so good as house building." "London Bricklayer" stated that the work was face-work on both sides. What is the percentage of face-work on an ordinary dwelling-house? The comparison is obvious. Next, "because extra money was paid, naturally more work was done." It does not occur to him that, if it is impossible to lay 800 bricks per day, it is just as impossible if the men were paid £5 per hour. I will pass over the assertion that I am not a practical man, and I thank you, sir, for drawing Mr. Sharp's attention to his error.

In reading the letter by "R.E.," I thought it was a fine piece of humorous sarcasm, to state that he hoped every craftsman in bricklaying would endeavour to attain the speed of 1,900 bricks per day. Mr. Sharp is evidently without that sense of humour, as he has taken the matter quite seriously. I should like to know what Mr. Sharp thinks of the letter by "General Foreman." The circumstances that Mr. Sharp asked for in his first letter seem to be expounded there.

In conclusion, I thank you for your tolerance towards us in allowing our quibbling to take up so much of your valuable space—for, after all, it is not a question of what we have done, or of what we can do, but what we are doing.

I sincerely hope that all workmen will put their backs into it and endeavour to earn the good wages they are receiving.

WALTER J. C. ALFLATT ("*London Bricklayer*").

An Addition to the Geffrye Museum Collection.

SIR,—With reference to the letter of Mr. William Rennie in your issue for June 11, calling attention to the mahogany panelled room from the residence of the late Alfred Stevens, now being exhibited at the Geffrye Museum, in Kingsland-road, it will probably interest your readers to know that quite recently there has also been added to the collection a very fine panelled room in deal from a house in Artillery-lane.

This room has a very richly carved chimney-piece and overmantel, the latter having a painted landscape panel representing a garden scene. The panelling is plain, but of good proportion; the two over-doors are moulded, but not carved. The original ceiling and cornice was in plaster and could not be removed; but the cornice has been reproduced and half of the ceiling has been drawn full size and painted in monochrome. The room is very suggestive of Abraham Swan's style, and it is quite probable that he designed and carried out his work about 1745. The museum is open every day (except Mondays), from 11 a.m. till 6 p.m.; Sundays, 2 p.m. till 6 p.m. E. HAWKING, *Curator.*

The Stead Memorial.

The portrait bronze erected by British and American journalists to commemorate the late W. T. Stead, was unveiled on Monday by Mr. J. A. Spender. The memorial, which is the work of Sir George Frampton, is affixed to one of the terraces on the Thames Embankment, nearly opposite the Temple Station, and bears an inscription. A similar memorial has been raised in New York.

AN ARCHITECT'S HOLIDAY IN ITALY.—I.

IMPRESSIONS OF ROME.

BY H. J. BIRNSTINGL, A.R.I.B.A.

To every young student of architecture there must come a yearning to visit Italy, which grows ever more insistent as his knowledge and his familiarity with the country and all that it contains increases. For he will realise that in Italy, as in no other country, he will find the deposits of the successive ages and civilisation; visible testimonies of the struggles, thoughts and aspirations of mankind. He will be able to appreciate the evolution and developments of the styles, with their nuances of transition, and, if he be imaginative, he will succeed in recapturing from amidst the works of the past some of that spirit which has helped to mould the world into its present shape. He need not—nor indeed should he—devote all his attention to architecture, for every branch of plastic art is there in perfect form for his consideration, and permeating all is the ineffable beauty of the country, which casts, as it were, a glamour over the whole.

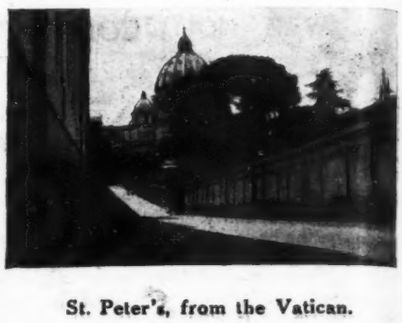
The present conditions are most propitious for a visit to Italy; the exchange is still very favourable, so that it is probable it may be many years before a visit may be made at so little expense as at present. Also, the country is comparatively free from the inquisitive and aggressive tourist whose presence in the past has so disturbed the enjoyment of the genuine student and searcher for beauty. In estimating the probable cost of a stay in Italy an allowance of 100 lire a day may be taken as a very ample figure, which will include staying at the best hotels, and allow for liberal excursions and the purchase of many of those fascinating *bric-a-brac*—genuine or spurious according to the luck or knowledge of the purchaser—which allure the passer-by. The journey to Italy is not made with quite the same degree of comfort as in the days before the war, but a through sleeping-car may be obtained from Paris to Rome at a small additional expense over the ordinary first-class fare, the journey taking about 36 hours. A train-de-luxe runs three times a week which performs the journey somewhat more quickly, but this advantage is outweighed by the fact that the frontier is crossed by night, and as this is a lengthy and by no means pleasant ordeal, it obviates any possibility of a continuous night's rest.

The journey is now made *via* Modane in order to avoid passing through Switzerland, which would entail the terror of another frontier, with all the concomitant discomfort, in addition to another *viséé* to a passport, which in any case will be found soon enough to lose its pristine freshness under a multitude of official stampings and endorsements. It may not be out of place to mention at this juncture that on arrival at the first town of destination, if a stay of more than three days is to be made, the passport must be sent to the police for a *permis de séjour*, without which a permission to leave the country will be difficult to obtain, but the matter may be negotiated through the hotel porter. The journey itself through the mountainous province of Savoy is full of beauty.

On the first arrival at a town in a new country every sense becomes immediately on the alert, and a multitude of impressions are absorbed through each of them—at first in a veritably chaotic confusion, the mind being able to do no more than register them, leaving any process of assortment or collation to a later and calmer period. Everything is startling in its novelty, so that the very blueness of the sky and the unaccustomed smell of the street, equally with the appearance and gesticulations of the crowds on the pavements and the strident cries of the drivers, absorb the attention. In Rome this state of mental confusion is undoubtedly greater than in any other Italian town; its size may contribute slightly to this state, but the real contribution is made by the signs of the successive deposits of two thousand years.

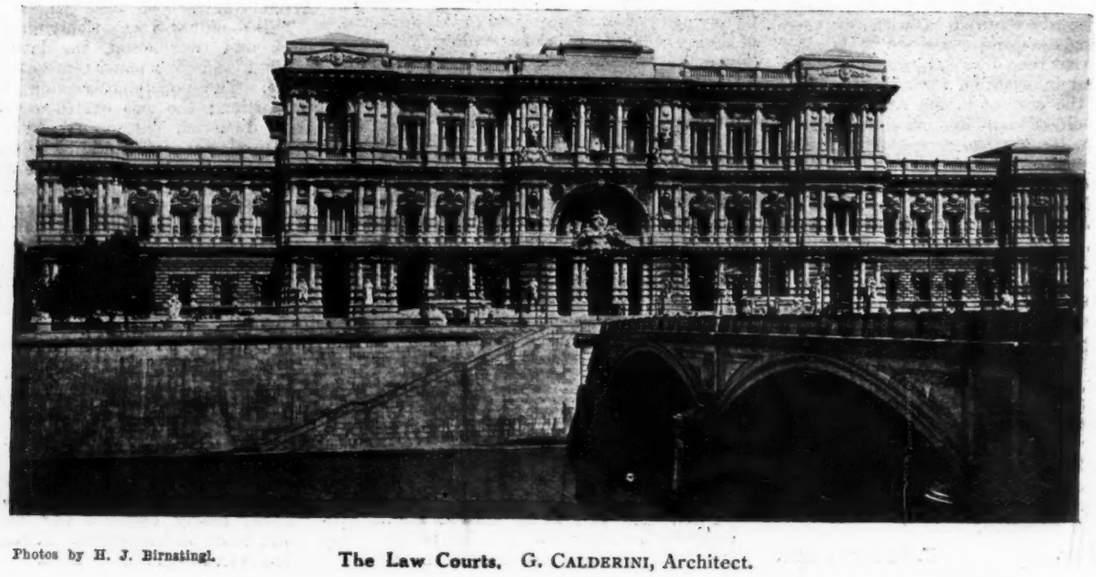
One of the first coherent impressions of Rome is that of a city of fountains and steps; another is that of a city designed by Piranesi. Only in Rome is it possible to realise the full architectural value in civic design of running water and steps; at every point the eye and ear are greeted by the refreshing sight and sound of a lofty jet flung into the air by some turbulent figure, or a gentle stream flowing languidly from the effigy of a recumbent pagan deity. And the mind is amazed, bewildered, and above all enchanted by the sudden and unexpected changes of levels. Vistas of steps, straight or tortuous—steep, as in the ascent to San Pietro in Vincoli, on the Monte Esquilino, or shallow, as in the approach to the Capitol—are constantly disclosing themselves; from each hill a new view of the city is obtained, the buildings changing their position in regard to each other as if in some giant kaleidoscope, and from all of them is seen the dome of St. Peter's, hanging like a great bubble in the vibrant summer air. The added interest which accrues from these hills is beyond estimation, and the city remains a ceaseless novelty and a perpetual series of wondrous surprises.

Every student, before arriving at Rome, should make himself familiar with the works of Piranesi. Not to do so is to miss a very fine and intense sympathy with that great master, for, without any conscious effort, Rome reacts upon the mind of the beholder to-day as it reacted on Piranesi's mind 180 years ago, even to the production of that feeling of feverish energy that is so patent in many of his etchings. A day's walk about Rome is sufficient to induce into one's very sleep visions like the "Carcere d'invenzione" or the "opere varie." An acquaintance, too, with the drawings of Giovanni Montano at the Soane Museum, and the scenic designs of Bibiena, who, according to Professor Blomfield, to some extent anticipated Piranesi, and with the drawings of Tesi, will render the intense enjoyment still keener.



St. Peter's, from the Vatican.

After a few days spent in absorbing impressions, in wandering, and in contemplation, Rome, both subjectively and objectively, seems to present itself with four main architectural phases: the Classic, the early Renaissance, the late Renaissance, and modern Rome. And it will be found upon examination that these divisions, although they make themselves felt in the first place through the architecture, correspond very precisely with definite historical periods. The classic Rome shows itself in the Forum, on the Palatine, in the museums, and in choice fragments half buried amongst the city's later life; slender columns, with their flutings scarcely discernible, morsels of great cornices, the delicate lines of their rich adornment still apparent, pediments, capitals, entablatures, the pagan spirit lingering on in strange contrast to the modern life, in this is written the history of the Roman Empire. The palaces of the early Renaissance—the second phase, as it were—the Palazzo Cancelleria and the Palazzo Torlonia of Bramante, the Farnese Palace of Sangallo, and the Palazzo Massimi of Peruzzi proclaim Rome of the patricians and the cardinals; a period of secular prosperity, delighting in the newly-discovered classic styles. It is, however, the third period that



Photos by H. J. Birnstingl. **The Law Courts.** G. CALDERINI, Architect.

has made the largest contribution to Rome as it appears to-day; Rome of the fountains, of the steps, and of the *baroque* churches—those decadent buildings which adorn the town like rich, decaying, over-ripened fruit that casts its trail about a sumptuous garden. Michelangelo is the central figure standing midway between these phases. In him the style culminated, yet in his striving for the immense, in his craving for inappropriate anatomical display, and in his later abuse of every classic form he inaugurates its degradation—a work which those who followed him, Giacomo della Porta, Carlo Maderna, Borromeni and Carlo Fontana, completed. This is Rome of the popes, a period to be differentiated, as definitely historically as architecturally, from that which preceded it, for the city had been captured and pillaged, and orthodoxy was once more reinstated. It is to Pope Sixtus V, more than to any other pope, that Rome owes its present aspect. Much as we may despise and deplore the existence of these decadent buildings, which ignore every canon of taste with their profusion of ornament and their overladen adornments, and reduce to ignominy the virility of the classic elements, yet it is impossible to deny that a certain charm insidiously makes itself felt. They seem to form an integral part of the landscape, to be indigenous to the soil, which has been so richly fertilised with architectural *debris*. The fourth Rome is represented by the Law Courts, and various new commercial buildings, but it is dominated by the monument to Victor Emanuelle.* This great white marble pile, full of defects as it undoubtedly is, yet shows how the desire for creating vast buildings still lingers with the race. No other nation would undertake a monument so vast, so costly, or so magnificent, or would have pursued its labours with such unceasing patience, replacing with marble, piece by piece, the plaster counterfeits. Thus, like a coloured thread through a piece of tapestry, often obscured but always re-appearing, the same trait may be observed, the desire for size, for magnificence, for lavish decoration, showing itself in the baths of Caracalla, in the Farnesi Palace, in St. Peter's and in the monument to Victor Emanuelle II.

The choice of an hotel is an important consideration, for upon its position so much depends; more particularly is this so if the stay is to be of short duration, for each precious moment should be spent in acquiring a galaxy of fair impressions, and, if possible, a room should be selected through the windows of which a gracious wide-spread view may be obtained, so that the fair spirit of the city may be imbibed through every freshened sense, even during the mundane process of dressing. At the head of the steps in the Piazza di Spagna, next to the church of S. Trinita de' Monti, such a spot is to be found. There, on the Monte Pincio adjoining the terraced gardens, with their cypresses, their fountains, their joyous array of flowers, Rome may be seen in the golden glow of a sunset or the rosy flush of a dawn, and the approach from below is one of the beauties of the city. The broadly curved flights of steps designed by Specchi and De Sanctis ascend to the church above, which is set curiously yet delightfully askew, as if to show that a rare beauty is obtainable from an arrangement not truly axial; and below is the justly famous little fountain of La Barcacia, by Bernini—in the summer time is added, against the mellowed yellow surfaces of wall and steps, a further brilliancy by the wares of flower-vendors who cluster at their feet. Above all is the sky; a rich blue canopy, of depth impenetrable.

If the length of the stay permit, an excursion should be made to Tivoli (the journey is made by steam tram from the Porta of San Lorenzo). There amidst the rich decay of the great garden of the Villa d'Este, with its mighty cypresses, its hundreds of fountains, its innumerable vistas, its grottoes, cascades, pavilions, its perspective of steps, of terraces with unexpected glimpses of the great parched and arid plain of the Campagna, may be recaptured the spirit of the sixteenth century which is distilled amongst the pungent odour of ceaseless disentegration that proceeds sadly and relentlessly. Perched audaciously high up upon the rocks is the beautiful little Temple of Vesta—or of Hercules Saxanus—an open colonnaded circular edifice with 18 Corinthian columns in comparatively good state of preservation.

On the eve before departure the Palatine should be visited, not for the purpose of study or of sketching, or measuring any of the exquisite fragments that reveal themselves to the eye of the diligent loiterer, nor for the purpose of attempting an imaginary reconstruction of the vast ruins of Imperial Rome, but rather for the purpose of filling the mind, as if it were some vast storehouse, with the spirit of Rome, for fortification against some future barren moment. For from a little belvedere on the Palatine there is a view to eastward as precious a vision as it is ever the lot of man to behold; it embraces the great Colosseum, the Aqua Claudia, the Lateran, the Aventine, and further southward the vastness of St. Peter's. And from another point on the Palatine, in the Farnese Garden, all riotously gay with flowers growing in the shade of the slender cypress trees, there is a westward view comprising Rome in all its phases—the Forum, here and there an early palace, above, the Capitol, and beyond, gleaming white and gold, the great new monument. And as one stands there the very life of Rome is flung up into the nostrils, into the eyes, exuded from the earth, the stones, the buildings, burning into one's very being an impression that is ineffaceable and indelible. That is Rome.

* Illustrated in the *Builder* for June 9, 1911, Jan. 5, 1912, and June 21, 1912.

THE LATE TEMPLE MOORE.

WE regret to announce the death of Mr. Temple Moore, which took place suddenly at his home at Hampstead on June 30th. He was actually designing a few hours before his death.

He came of a military stock, being the elder son of the late Major-General G. F. Moore, but before he had learnt to write, his talent showed itself. When as a child he was constantly sketching, using pencil and india rubber at the age of three—and in after years the faculty of drawing with his left hand as easily as his right was extraordinary.

He was articled in 1875, to the late Mr. G. Gilbert Scott, who afterwards employed him to act as his assistant architect and successor. Of a studious nature, he was quiet and reserved, full of love, and helping everybody with his knowledge of architecture and the allied arts; so sincere and thorough in his work, that he would get out his own working drawings, giving himself endless trouble to make the smallest detail harmonious. He educated a school of pupils, amongst whom may be mentioned Mr. Gilbert Scott, A.R.A. He travelled much in France, Italy and the British Isles, and made hundreds of sketches of mediæval churches. He was a man who lived for his profession; sketching and measuring old work were his recreations, and he has been known to tramp many miles to visit some ancient church to study special features. Gifted with a prodigious memory, he would quote with accuracy, measurements and details of various parts of churches that he had not seen for many years. Mr. Moore's sympathetic knowledge of the past found full scope in the preservation of an ancient building, in which he especially excelled, and it was wonderful how he would keep the correct feeling, and seemed to be able to inspire those working with him and for him with the mediæval spirit.

Amongst the most interesting examples of such work are St. William's College, York, and Yaxley Church, Hunts. Of the most beautiful and characteristic examples of his original work may be mentioned St. Wilfred's Church, Harrogate, the Pusey House, Oxford, St. Peter's Church, Barnsley, St. Mary's, Sledmere, and a hundred other new churches and additions which will remain a lasting memorial of his greatness. In recent years he was assisted by his son—Richard Temple Moore (drowned in S.S. "Leinster") and his partner, Mr. Leslie Moore, F.R.I.B.A., by whom he wished the honoured tradition of his practice to be carried on. He was one of an ever-lessening number of those who inherit a general instinct for the appreciation of our old Gothic architecture.

THE OFFICE NATIONAL DES UNIVERSITES ET ECOLES FRANCAISE.

THE London Branch of the "Office National des Universités et Ecoles Françaises," which was founded in the summer of 1919, in co-operation with the British and American university organisations of the same type, has, like the head office already existing in Paris, the official recognition and active support of the French Ministry of Public Instruction.

It aims at securing closer intercourse between French, British and American students and teachers, while diffusing a wider knowledge of French intellectual culture of every kind. For this purpose, premises have been selected in the heart of London, where a library has been set up for information concerning the universities and the principal State schools of France, together with a lecture-room where eminent French scholars visiting London may give lectures and where French students and teachers may meet their Anglo-Saxon colleagues. There is also a secretariat, the duties of which are to supply every information that may be required regarding the various universities, technical schools, and commercial and artistic establishments of France, in order that English-speaking students and the teachers in charge of their studies may be directed to those towns and establishments which will prove most suitable for the furtherance of their intellectual pursuits. On the other hand, this office is to remain in close contact with British universities, in order to direct to the best advantage those students who come over to England for their studies.

This French office has found it beneficial for its action in both these directions to come to an agreement with the offices recently set up in London by the Universities Bureau of the British Empire and the American University Union in Europe. These three bodies have their joint headquarters in a building belonging to the Universities Bureau of the British Empire, and situated at 50, Russell-square, W.C. 1.

Under this arrangement, the lecture room and library are shared by the three organisations, so as to increase the opportunities for intercourse between the students and teachers of the three allied associated nations. The general management of the Office National (finance, &c.), is in the hands of a committee composed of French citizens long established in London.

The London Branch of the "Office National des Universités et Ecoles Françaises" has already done a great deal of useful work by helping British students from this country and the Dominions to go to France, and assisting French students on their arrival in this country; and also in the exchange of teachers and professors in universities.

We understand that the Direction des Beaux Arts, in Paris, would welcome and assist any intercourse in the teaching of architecture between England and France, and the Office National would be glad to act as the "Liaison Office," to render any assistance that may be suggested.

Rome: The Forum.

EXEMPTION FOR THE FINAL EXAMINATION FOR ASSOCIATESHIP, R.I.B.A.

By Professor C. H. REILLY.

THE action of the Council of the R.I.B.A. in granting to the Architectural Association School and to the School of Architecture of the University of Liverpool exemption for their successful students, after a five-years' course, from the whole of the Final Examination for Associateship, with the exception of the short paper on professional practice, marks a great step forward in architectural education in this country. It means that the Institute recognises that there are in England, at the present time, at least two schools of architecture worthy to rank with the great schools of medicine, law, and engineering, scattered up and down the land, and, like them, able to qualify their members for practice. It marks the final and definite establishment of the School system of training in architecture in place of the mediæval system of apprenticeship. It means that we have now in England taken the same step forward which America took some twenty years ago, and France some two hundred.

Historically it is right and just that the two schools to be chosen first for this honour should be the two which first founded complete day courses in architecture. The University of Liverpool devoted its Chair of Art to Architecture in 1894, and opened its School at the same time, and the Architectural Association founded its day school a few years later.

In granting these privileges the Institute has, as befits the governing body of the profession, laid down certain safeguards. It has, first of all, through its Board of Architectural Education, appoved the courses of the two Schools. It has further insisted that the Schools should appoint two examiners approved by the Board from outside their staffs, and should give to these examiners a complete power of veto over the results of all examinations. It has also —and this seems to be a very interesting and wise provision—arranged that four selected designs from each qualified student should afterwards be exhibited at the Institute. The designs are not to be exhibited before the students qualify, in order that the authority of the School may be maintained intact. By exhibiting the design afterwards, however, the Institute will be able to see whether their trust in the work of any particular School is justified. If from the exhibition it is obvious that a School is qualifying its students at too low a level, its privilege of exemption can and should be withdrawn. On the other hand, by means of such an exhibition a very healthy rivalry will be established between the various Schools. The Liverpool School is already delighted at the prospect of being able to hang its work side by side with that of the Architectural Association, so that the profession can judge between them, and I have no doubt the Architectural Association School feels the same. It is to be hoped that the Universities of Manchester and London will soon follow suit, and that a series of great Schools of Architecture qualifying their students will now be built up throughout the country.

These Schools will naturally differ in the character of the work turned out. Some will specialise in one thing, some in another. Such specialisation is all to the good, and prevents the dead level of mediocrity which the present highly centralised system fosters. Up till now any young man who has passed the Institute examinations is apt to think he is a highly competent and trained architect. It is only if he has been through a long and graduated course in a school that he knows that this is far from the case. The Diploma of his particular school will add a special lustre to his A.R.I.B.A., just as a medical man from Edinburgh feels that his degree gives a special distinction to his qualification. The criticism often raised against the great Ecole des Beaux Arts is that it stamps the whole of the French architecture at any given epoch with an indelible mark. The step the Institute has taken in decentralisation will avoid this. English architecture will never now become either all A.A., or all Liverpool, or all anything else, however magnificent may be the dreams that visit the heads of enthusiastic teachers. We are a nation of individualists, and shall remain so. Our schools will develop on individual lines, while the Institute, as a watchful mother, will see that none degenerates into eccentricity or incompetence. The only warning one would like to sound is that it will be much better to have a few large, efficient, and properly equipped schools in the main centres of population than a number of small ones less efficiently staffed and equipped. In this respect, as in many others, we may profit by the experience of the medical profession, which during the last fifty years has been through exactly the same evolution from pupilage to school that we are now experiencing.

THE ARCHITECTURAL ASSOCIATION.

Changes for Session 1920–21.

OUR readers will be glad to know that the Architectural Association is passing through a period of considerable prosperity; the new premises at Bedford-square are already overcrowded, and the Association is taking steps further to enlarge the accommodation. The pressure on the Directorate of the Schools is such that many important changes have been decided upon by the Council with a view to extending further the scope and value of the training. The main changes are in the direction of increased efficiency in training and, generally speaking, of depth of research.

The old day-school has been re-organised into two sections:—a Preparatory School of approximately two years' duration, and an Advanced School of one year's duration, leading onwards to five specialised courses, called "Graduate Courses," in Construction, Design, Communal Planning, Decoration, and Business. The A. A. Diploma is awarded after a two years' course in these subjects, and will (under certain conditions) be accepted by the R.I.B.A. in lieu of the Final Examination, with the exception of the Professional Practice Section. These Graduate Courses were inaugurated in 1919, and have now been running a full session with such satisfactory results that the Council has confidence in their meeting the need for higher education in specialised subjects.

Mr. Robert Atkinson has been appointed Director of Education, a post equivalent to that of Dean in a University faculty, and a strong Committee of experienced teachers has been created as the School Directorate. Mr. H. M. Robertson, Dip. *Ecole des Beaux Arts*, Reg. A., New York State, has been appointed the new Principal of the Day School, with Dr. Faber, O.B.E., D.Sc., A.M. Inst. C.E., A.M.I.E.E., A.C.G.I., in charge of the Constructional Graduate Course, Mr. L. H. Bucknell, A.R.I.B.A., in charge of the Graduate Design and Communal-planning Course, and Mr. P. W. Farmer, in charge of the Business Course. The A. A. Atelier has recently been supervised by Mr. Robertson, and Mr. Bradshaw, Rome Scholar, 1912, has been appointed to succeed him as Sous-Patron.

With the staff of masters already in the School, the new appointments make the A.A. teaching staff well worthy to uphold the traditions of the School.

The Council very much regrets the loss to the School of the services of Mr. Robert Lowry, Deputy Principal, who has decided to devote his full time to practice in the future. The A.A. appointments are invariably given to architects in practice, and private practice is considered essential for the proper co-relation of practice and teaching.

NOTES ON EXHIBITIONS.

One of the pleasantest functions of the year is the conversazione of the Institution of Civil Engineers, which now has the excellent setting afforded by Mr. Miller's handsome building in Great George-street. One cannot help wondering whether the time is far distant when the R.I.B.A. might be as suitably housed. We architects could not perhaps hope for quite an equal grandeur, but we might surely possess a house which would be worthy to represent our great art in an artistic and dignified manner. We could do very well with more of the social amenities which would gently insinuate the belief that the architect is after all of some little value in the world! The recurrence of the hospitality of the Institution of Civil Engineers brings afresh to us a desire for a more cordial and active co-operation between civil engineers and architects, especially in view of so many great undertakings which would benefit by their more intimate association. A brief examination of the many interesting exhibits on view during Tuesday evening is enough to open up a wide vista of scientific work which is going on in the world, and which has been largely expedited by the pressing need of the war. Aviation and the telephone owe much to this desperately increasing pressure. The unprecedented windstorm of 1916 showed us the need of underground communication, and now we can do a thousand miles of continuous audible underground telephony. Let anyone unacquainted with the progress in telephone work listen to the play of sound and tone which we heard on the telephone repeater shown by Messrs. R. M. Chamney, B.Sc., and C. Robinson, B.A., and they will wonder if any limit will be set to our progress. It would take more space than we can spare to refer to the models in detail which have such a widespread range as a "Claughton" express passenger engine, a travelling derrick gantry, a model of air supply to the boiler rooms of light cruisers, a concrete tester, or a calculating machine for war saving certificates. An interesting model is shown of how a door to an aerodrome 100 ft. square may be simply lifted in 3 minutes from the ground level, or lowered again with its fitted rails for the exit of the airship. When we note the continuous movement of the quay wall at the Tower of London, set forth in the diagram sent by Dr. Stanton, we realise afresh that nothing in the world is absolutely still, but we may take some comfort from the Measuring Comparator, which will give a reading up to one millionth of an inch!

Amongst the many exhibitions now open to the public there are none which can appeal so strongly to the architect and decorator as the beautiful old Irish glass shown by Mrs. Stannus at the Fine Art Society, and the collection of old Chinese pottery and bronzes at Mr. W. B. Paterson's gallery in Bond-street. This latter is about the most interesting of its kind we have ever seen.

THE EMPIRE TIMBER EXHIBITION.

FOR anyone who may wish to appreciate the vastness of the British Empire and the extent of its resources, a visit to the Holland Park Skating Rink can most assuredly be recommended; it is indeed difficult to restrain a feeling of pride which the spectacle gives rise to of such a vast array of timber, such an immense variety of colour, texture, quality, combined with the knowledge that the whole display is produced within the Empire.

The Empire Timber Exhibition, which was opened on July 5 and remains open until July 17, has been arranged by the Department of Overseas Trade with the object of bringing into more universal use the numerous timbers of the British Empire, many of which are as yet scarcely known. During the war the shortage of timber was more acutely felt than was, probably, any other building material, and it was suddenly realised to what an extent England was dependent for its timber upon the import trade. Gradually the use of Empire-grown timber was developed, and the results have been surprisingly satisfactory; indeed, a visitor to the exhibition may well wonder why in the past we have been so careful to specify foreign wood for so many purposes when we grow such an enormous selection, ranging from the hardest to the softest timbers suitable for every conceivable purpose.

Many of the exhibits are remarkably beautiful; particularly noticeable in this respect is the Indian section, which contains furniture made in black walnut, in which a great feature is made of the burr panels, which have exquisite markings. Other beautiful exhibits are of silver grey wood, Curjun, Paduak—a deep red—and laurel wood. In many of these timbers close-grained burr figures of deep lustre are shown.

Although all are familiar with the charm and quality of home-grown oak, the finely-panelled room shown by Messrs. W. W. Howard, Bros. & Co., executed in English brown oak, is well worth inspection. The same firm has some good specimens of English ash burr, while Messrs. John Wright & Sons, Ltd., exhibit a beautiful panel in Ceylon satin-wood, perhaps one of the richest marked and finest toned pieces in the exhibition. Messrs. W. W. Howard, Bros. & Co. also show some furniture of excellent design by Mr. H. Filmer, executed with great precision, accuracy and careful workmanship by the Metropolitan Joinery Co., Ltd.

Messrs. Samuel Elliot & Sons, of Reading, likewise show examples of work carried out in English oak, amongst them, a copy of a Jacobean door from Haddon Hall, together with exhibits of joinery, panelling, and parquetry in various home-grown timbers. Other well-made furniture is displayed by Messrs. Trollope & Colls, which comprises pieces of rare beauty made in Australian rose-wood.

Western Australia is well represented with many kinds of timbers, including the Karri and the Tuart specimens of eucalyptus, and both used extensively for rolling-stock, shipbuilding and wheelwright work, although the former is also used for interior house work, for decorative purposes, and for furniture.

So far we have considered timber that is perhaps more suited to large, well-equipped buildings and luxurious furniture, but the pressing problem of the day—the housing problem—is by no means neglected. Timber from the coniferous pine and fir is there in large variety. The Canada Overseas Trading Co. show a large variety of doors, shipped finished. Many of them are of good design, and all of them are heavily built and well assembled. The prices vary from about 22s. to 180s., the former being suitable for work which is to be painted, while the latter are finely grained and free from all blemishes. These doors are in standard sizes.

Mr. G. E. W. Crowe, agent for the British-Canadian Export Co., Ltd. (of Canada), exhibits various Canadian kitchen dressers and cabinets. These are a ready-cut mass production, well suited for housing schemes; they are made of Canadian birch and Canadian fir, with a table-top of Canadian bass-wood. The dresser is extremely well-arranged, and the design has been carefully considered to economise both in space and labour.

The exhibit of H.M. Office of Works, comprising actual members and timbers from Westminster Hall, old fragments of weighty scantling, some 600 years old, showing the fearful ravages made by various insects, is one of considerable interest. A beautifully-made model of the famous hammer-beam truss of the roof is shown.

It may, with justification, be said that the exhibition is one that should be of use to all who are interested in building in its most comprehensive sense, which includes internal decoration, and furniture designing, for in the latter as much depends upon the choice of appropriately marked and coloured timber as upon the design of the article. But although we are primarily concerned with the building trade, this is by no means the only section of the public who should see the exhibits.

Finally, a word must be said about the catalogue, which is a veritable mine of information, and by no means an ephemeral product to be cast aside on leaving the hall.

The Restoration of St. William's College, York: The Court.—The late TEMPLE MOORE, Architect. (*See* p. 37.)

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ILLUSTRATIONS.

The Dover Patrol.

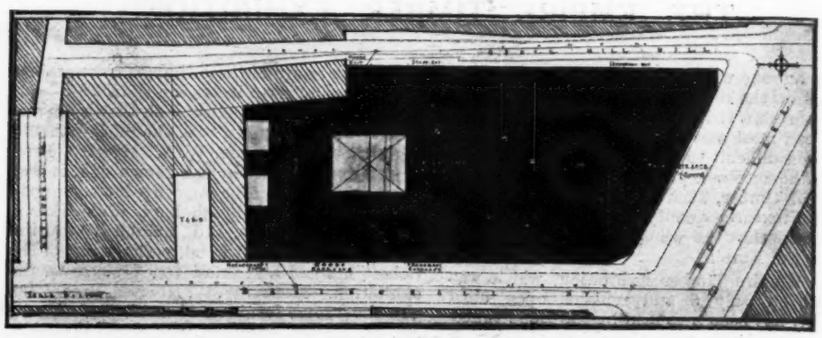
To some at least a monument such as this will seem a fitting symbolism of the qualities which made the whole of the Dover Patrol possible. In no phase of British history have human heroism and endurance shone forth with finer lustre. An obelisk of enduring granite, grey in the storm, or sparkling in the sun, stands on the cliff-girt borders of our land for ever typifying the best qualities of our race. Through circling clouds and storm it points to the serene heights above the petty conflicts of our life, and in the simplicity of its form and details it typifies the finer and broader aspect of life.

Business Premises, Leeds.

Our illustration of the view of Messrs. Cackett & Burns-Dick's accepted design evidently does not do justice to the work, which would be better appreciated from the elevational drawings.

Monument at Arrochar.

This sketch shows the monument at Arrochar recently erected to the memory of Mr. Maxwell Hedderwick, one of the proprietors of the *Glasgow Citizen*, in the Churchyard of Arrochar, which is situated between the head of Loch Long and Loch Lomond, amid the picturesque and beautiful scenery of the Argyllshire and Ben Lomond mountain ranges. The monument is carried out in a fine and durable freestone from Leoch Quarry, and was designed by Mr. T. L. Watson, architect, of Glasgow.



Block Plan, Proposed Business Premises, Leeds.

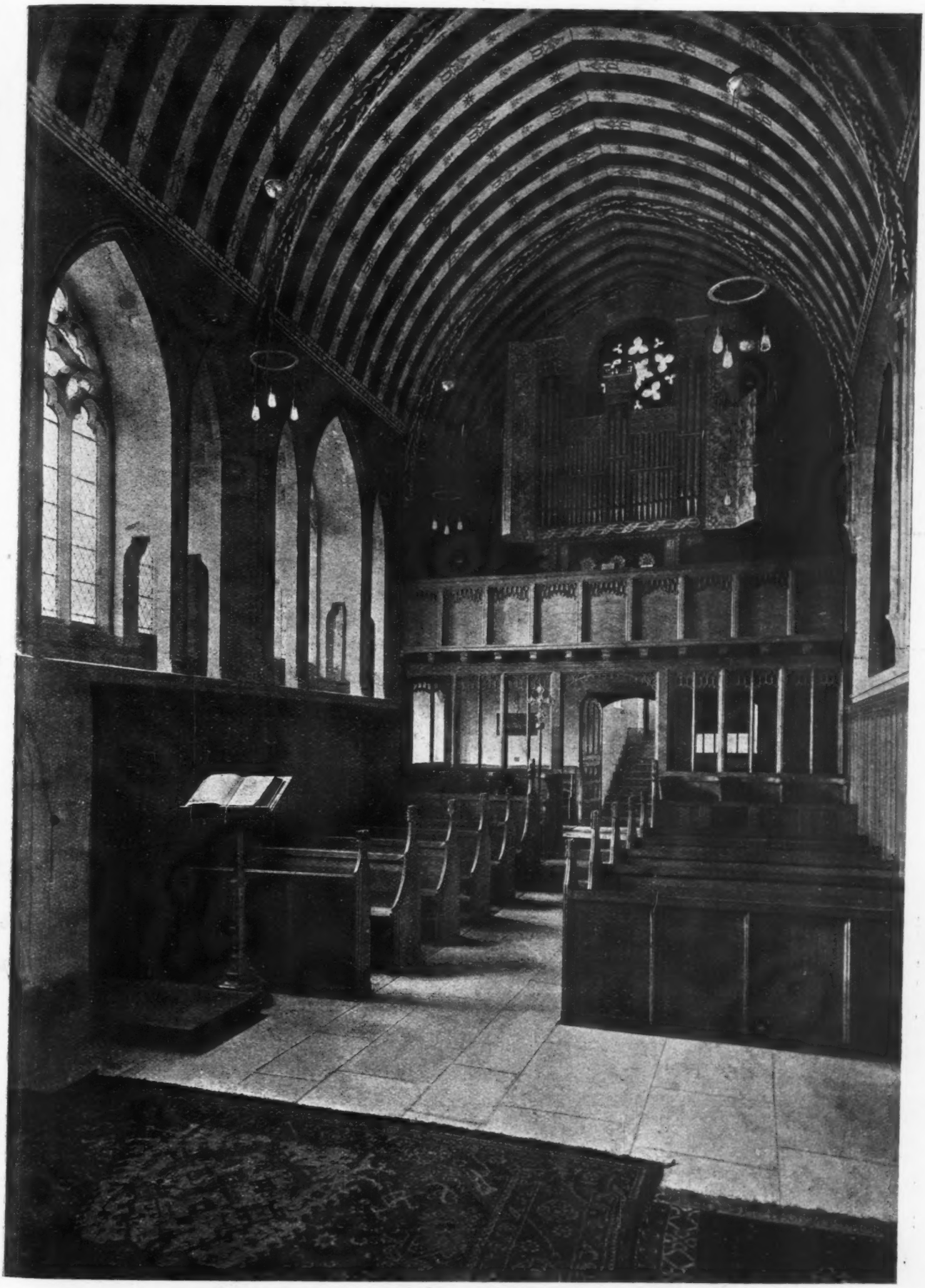
Saint Osyth Houses.

The group of cottages which Mr. Amian Champneys is to build at St. Osyth carry out in a very agreeable way the traditional good qualities of old English work, and should prove an acceptable addition to local architecture.

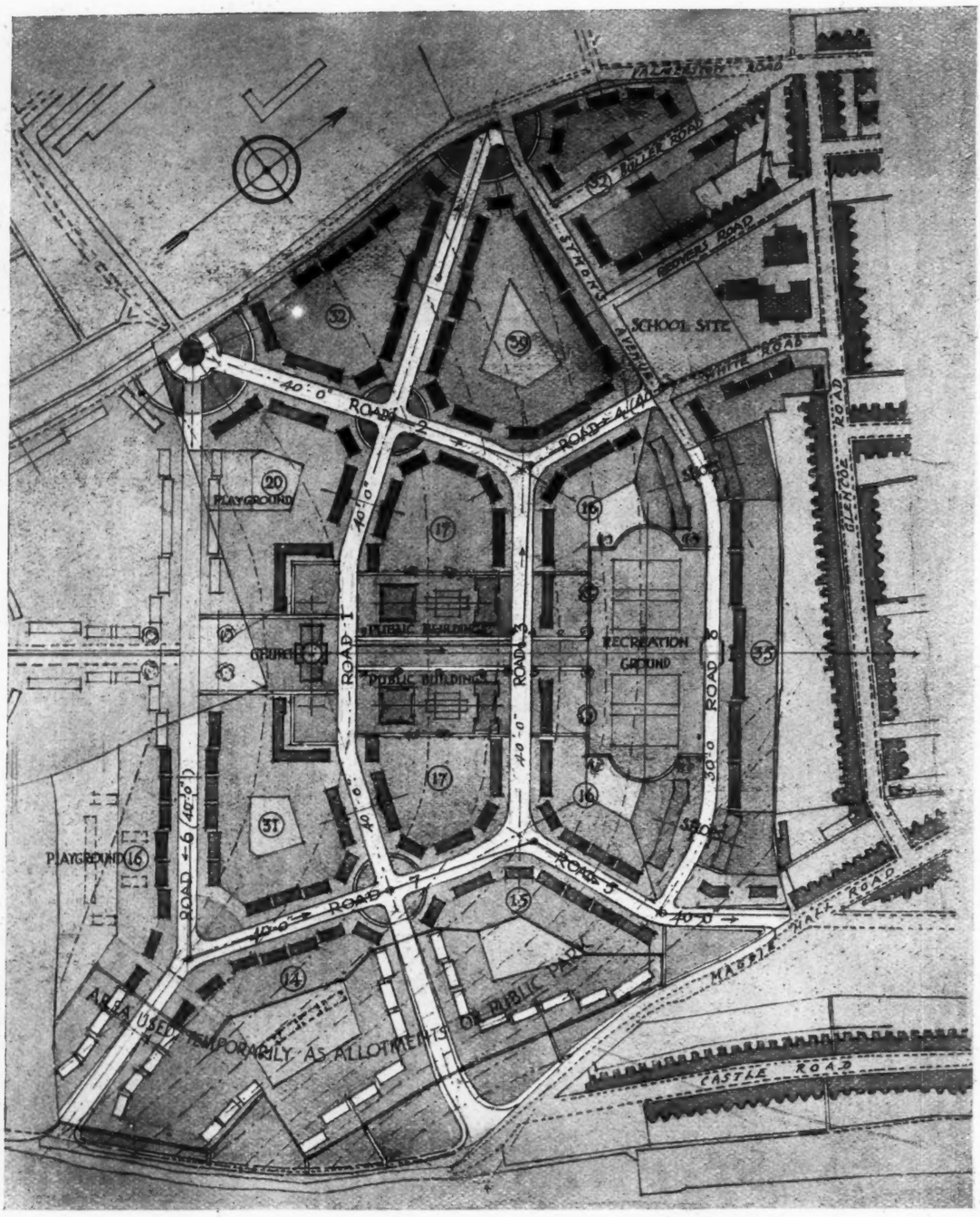
The London House Builders' Association.

There has recently been formed a London Association of House Builders, with the object of uniting the house builders for a wide area round London to deal with the many questions which affect the house building trade which, it is felt, cannot be dealt with through any other organisation. The new Association will be affiliated with all the other House Builders' Associations in the country in the National Federation of House Builders. The Federation, which was formed some four years ago, now represents influential associations in many parts of the country, and it was through the efforts of the Federation that private enterprise has received some measure of encouragement by the Ministry of Health. It is expected that the new London Association will take a prominent part in future negotiations with the Housing Authorities, and that it may be the means of enlisting the services of many house builders in the solution of the present Housing difficulty. Temporary offices have been secured at 15, Lower Grosvenor-place, S.W.1, and the Secretary *pro tem.* is Mr. Norman McKellen, A.S.A.A.

South Hill Park: The Staircase.—The late TEMPLE MOORE, Architect. (*See p.* 37).



Chapel, Bishop's Hostel, Lincoln. The late TEMPLE MOORE, Architect.



Chatham Lay-out Competition.

Design submitted by Mr. THEODORE FYFE, A.R.I.B.A., and MR. T. A. LODGE, O.B.E., A.R.I.B.A.

[The first 100 houses are shown in black. The areas (in acres) are as follows:—Allotments and playgrounds, 2.7; church, public buildings, shops, public gardens and open spaces, 9.28; temporarily reserved as a public park, 6; roads (between fences) for 300 houses, 5.09; additional roads and road widening, 0.9; total, 23.97. The net area of the site (50 acres), for the 300 houses is 26.03 acres. The number of houses to the net acre is 11.5; an average of 30 ft. frontage per house has been allowed throughout.]

THE TOWN PLANNING INSTITUTE.

THE FUTURE OF TOWN PLANNING.

MR. G. L. PEPLER (President) took the chair on June 25 at a meeting of the Institute, held at the Surveyors' Institution, Great George-street, Westminster, when VISCOUNT ASTOR (Parliamentary Secretary to the Minister of Health) gave an address on "The Future of Town Planning."

VISCOUNT ASTOR said that before attempting to look into the future it would repay them to take a brief glance at the past, and he proceeded to refer to the earliest examples of town planning and to trace the history of the town planning movement in this country. From the town planning of the past would be noted the passing away of splendour that took no thought of the homes of the people; they were to-day witnessing the collapse of an industrial system built up with a similar disregard of human welfare, and if civilisation was to be saved, a new spirit must be breathed into it. From the town-planning point of view the lesson was that, while designing in the grand manner and for utility had their places, the basis of all must be good homes and conditions that made a full life possible. In the past there had been no real town planning because one aspect had always been given undue prominence. What was required in the future was a plan that gave full scope for all sides of human endeavour and aspiration. It was quite right that housing should take first place at the moment, but unless it was planned as part of the whole framework there would be the same lopsidedness that had been the bane in the past, and housing itself would be ineffective. This did not mean that there need be any delay of the housing programme. The need for houses was so great that while they built to meet immediate needs they could at the same time plan so that future building would fit into the general framework.

In addition to housing there were several aspects of town planning that had recently emerged into prominence as practice had proceeded. First there was the increase of motor traffic on the roads, in many cases already far beyond their capacity, and the need to preserve wide routes for new arterial roads. One advantage of the Town-Planning Acts was that they enabled traffic routes to be preserved in an economical manner without necessitating immediate construction. This enabled local authorities to safeguard the future without embarking on any large expenditure. Joint action by adjoining local authorities was particularly desirable in this respect, and it was a matter in which the Ministries of Health and Transport were already acting in co-operation in conjunction with groups of local authorities. If routes were not preserved now the development of efficient road transport would be greatly hampered. Secondly, regional town planning had come to the fore, as it had become obvious that however good individual plans might be they could not be entirely efficient unless they formed part of a general plan. An important start had been made with regard to regional town planning in the South Yorkshire coalfield, where the local authorities had appointed a Joint Town-Planning Committee, had engaged the services of Professor Abercrombie to advise them, and were proceeding with the preparation of an outline town plan for the whole region. It was the first large joint Committee of the kind, and already an adjoining group of local authorities was considering similar joint action. The Minister of Health had also appointed a Regional Survey Committee for South Wales, and this Committee was carrying out exhaustive investigations which would be reported shortly. At a meeting at Manchester in May, it was proposed that a request should be made for a similar committee to be set up with regard to South Lancashire.

To divide the country into suitable regions would be a difficult question, as there were so many factors which must be taken into account, such as geographical considerations and the fact that certain localities were dominated by a particular interest which might have little relation to the conformation of the land. An obvious difficulty was that the limits of geographical or industrial regions might bear no relation to the boundaries of local government areas, and that emphasised the necessity for preliminary survey work by regional committees. Before such regional committees were set up, perhaps a survey committee for the whole country was required in order to define the regions needing separate treatment. Another factor in town planning was the necessity for the control of the internal evolution of existing towns. It was clear that some towns had grown beyond the size at which the arteries could function healthily. One remedy would seem to be the gradual re-arrangement and improvement of existing towns and, concurrently, the establishment of new satellite towns to absorb the excess of new population. Some existing country towns might well be developed into garden cities, and in all the *sine qua non* should be the preservation of a surrounding belt of food-producing land. The decentralisation of markets was one of the problems to be considered in connection with regional planning and the re-planning of cities, and it was certainly a problem that required further investigation.

When the housing programme had got well under way and alternative accommodation could be provided, there would be an opportunity for that clearance of slums which was such a necessary part of the internal re-organisation of towns. Such clearances and reconstruction must form part of complete town planning schemes, so that all reorganisation might be on systematic and efficient lines and in order that the recurrence of the bad conditions which had accumulated in the past might be avoided.

It was proposed to make a fresh departure in procedure in the proposed new Town Planning Regulations. In the past it had been said that by embarking on a town planning scheme a local authority would check development in the area while the scheme was in course of preparation. The Act of 1919 provided a remedy for this alleged difficulty and in consequence the Regulations were intended to provide for the preparation of a preliminary plan shortly after the resolution to prepare a scheme has been passed. This plan would provisionally settle in outline principally the proposed main line of communication, the character and density of buildings to be allowed in various parts of the area, and any important proposed open spaces. When this preliminary plan had been approved by the Minister of Health, development would be permissible within the broad lines thus established, pending the completion of the detailed scheme, which must take a considerable length of time.

Discussion.

PROFESSOR T. ADAMS (Canada) proposed a vote of thanks to Lord Astor, and said that in the past they had relied too much on the power and adequacy of legislation to secure the application of town-planning throughout the country, and had not paid sufficient attention to the education of public opinion. If they were to succeed fully they must make public opinion alive to the national and economic necessities of town-planning as a means of stabilising the country's industries. Apart from his Government work in Canada he was called in in a consulting capacity by some of the towns, but these invitations did not come from the municipal bodies but usually from manufacturers who had formed themselves into a town-planning committee with the object of serving their industries and developing the life and the amenities of the cities in which they lived. Under present conditions manufacturers had to pay the same wages for labour whether it was intelligent and efficient or not, and it was to their advantage to attract the most efficient and intelligent labour to their districts. They would never get the right perspective of town-planning until they frankly faced the situation, which was that before it became a home question it was an industrial question. Thus they came to regional planning, and in regard to England they must deal with comprehensible and workable areas. They must depend on the Government to assist to secure this regional development. A regional survey must precede the regional plan, and that was more vital at the moment than pushing forward town planning. In some English housing schemes there were streets 10 ft. wide leading to *culs-de-sac*, and roads of 36 ft. and so on. The *cul-de-sac* was condemned in the old days when it was done by someone other than town planners; and if the narrow streets and *culs-de-sac* of the speculating builder were inherently wrong, did they become inherently good when planned as part of a small housing scheme by someone who was a member of the Town Planning Institute?

MR. E. R. ABBOTT seconded the motion, and said that town-planning should give full scope for all sides of human endeavour and aspiration. If they could get that spirit more into town-planning and forget a little about building lines and minor matters they would get on faster. He referred to the effect of the shorter hours being worked on the growing demands for public tennis courts, bowling greens, cricket grounds, &c., and expressed the belief that local authorities would have to face larger expenditure under this heading in the future.

MR. J. S. WHYBROW (Secretary, Labour Housing Council) called attention to the inability of the Metropolitan borough councils to purchase land for housing schemes outside their own areas, and suggested that if such power could not be given them there should at all events be a prohibition of building in some of the boroughs.

PROFESSOR S. D. ADSHEAD said that housing was well in hand, and they should now commence a propaganda for a good type of town-planning. They must have stated policies with regard to the way in which town planning was to be carried out or they would repeat many of the mistakes made when the 1909 Act was put into operation. They should make stated policies of such things as the open belt around densely populated towns, the isolation of heavy industries from housing schemes and the preservation of places of natural beauty.

MR. MONTAGU HARRIS (County Councils' Association) pointed out that the attempts to divide up England for various purposes had resulted in divisions which were not suitable for town-planning. To divide up in counties was impossible from the practical point of view, and they would have to ignore county boundaries. Before planning they must have an adequate survey. He had examined surveys made by local authorities under the 1919 Act, and whilst they contained much information each authority dealt with its own area only; there was a good deal of overlapping from the economic point of view in regard to housing needs where authorities were closely connected. The vote of thanks was put to the meeting and carried.

Country Meeting.

At the conclusion of the meeting, the Chairman announced that a country meeting would be held at Bath from September 23 to 26.

"Roads and Remembrance."

At a meeting held in London last week in support of the Roads and Remembrance Association, Mr. Rees Jeffreys, formerly secretary of the Road Board, said that one of the schemes proposed by the Road Board was the construction of a road between Kew Bridge and the Bath road, and he suggested that here the Association might purchase small strips of land alongside the new road to lay out as boulevards, playgrounds, &c., as a memorial to the Middlesex Regiment.

"STRUCTURAL STEELWORK." *

THIS work deals exclusively with the problems arising out of the use of steel work in the majority of the new buildings erected for use as warehouses, offices, &c., such structures as bridges, &c., being entirely outside the scope of the book. It is intended primarily for the designer, draughtsman, erector, and those who have to produce, and only indirectly to the student class of engineers, and it should be of great assistance to designers of steel-framed structures.

After two introductory chapters, three chapters are devoted to stanchions, followed by one on their design. Similarly, after an introductory chapter on beams and girders, five chapters follow treating with the subject of roof-trusses, and finally their design. Steel-framed buildings are very numerous in which floors occur; yet, in this work the word "floor" is not to be found in the index—although it occurs in the text. In the preface, attention is directly called to the mathematical treatment of "Section Modulus," "Moment of Inertia," and "Radius of Gyration" in chapter 2; whilst it is claimed that the symbols used have been chosen without "violation of generally accepted custom." For a long time past, the standard text-books on the subjects included in the book have employed the symbol "k" to denote radius of gyration, but the author employs "g"; "M" to denote bending movement, but the author employs "B"; and "Z" to denote section modulus, but the author employs "M." Surely these changes are not worth making, seeing the confusion entailed, and in the second volume promised it is to be hoped that Mr. Beck will revert to established custom.

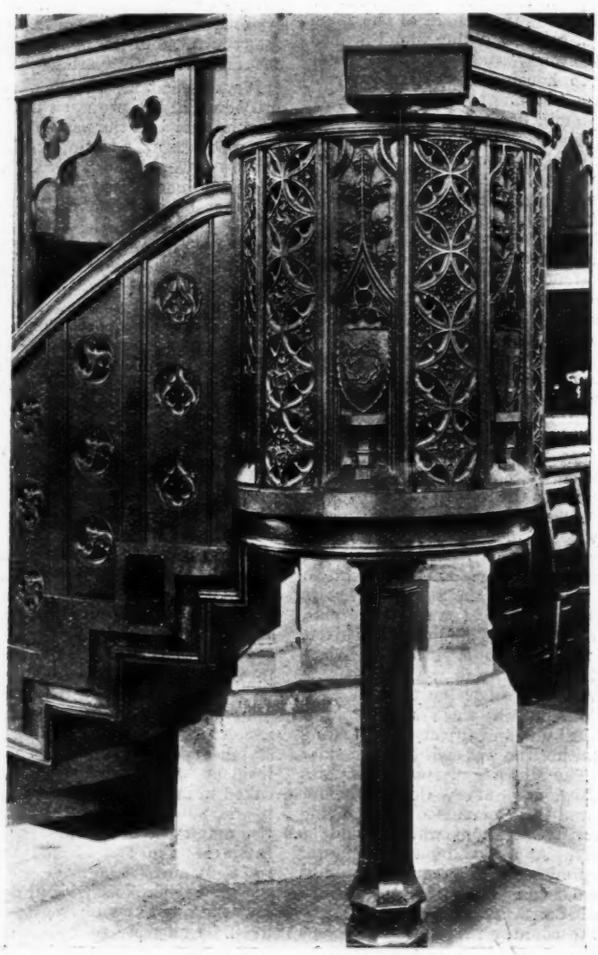
The author has evidently had to work with those whose early training has not included a sound knowledge of fundamentals; otherwise it is difficult to see any reason for spending so much space over fundamentals which are quite simple matters. The real difficulty is the unfortunate custom of calling the expression $E(ay^2)$ "the moment of inertia," instead of the "second moment" of an area—a, about some axis distant y. However, it is too late now to attempt this piece of reformation in nomenclature, and all that remains is to recognise that the name is absurd and to remove difficulties by pointing out the real significance of $E(ay^2)$. The whole of the theory of simple bending could have been dealt with quite simply and shortly without inventing any new terms or ideas, because the author assumes a knowledge of the integral calculus upon his reader's part; the usual method of demonstration requires no more mathematics than is used later. Calculus dodging is, after all, very hard work, and is very hard reading. Lord Grimthorpe's "Astronomy Without Mathematics" would have been simpler with mathematics.

The slope at any point in the span of a beam bent by a transverse load is defined to be "the ratio of 'rise' to 'going,'" &c., and is quite new, we think, as a definition of slope. In dealing with deflections, the methods employed to obtain the results are generally too long, and the statement on page 36 about equation (14) is not true in our experience. We think Case (i) should have been omitted, for, after all, it is but a special instance of Case (ii). Cases (vi) and (vii) appear very long (equation 41 on page 43 is surely very cumbrous), and cannot fulfil the claim of the author for increased simplicity; and we venture to commend, in preference, the treatment of Profs. Low, Morley and others, as being much shorter, more direct, and, therefore, less likely to confuse. Should not equation 103 read—

$$R_1 = W\left(\frac{1}{2+\frac{3H1}{2AL^3}}\right).$$

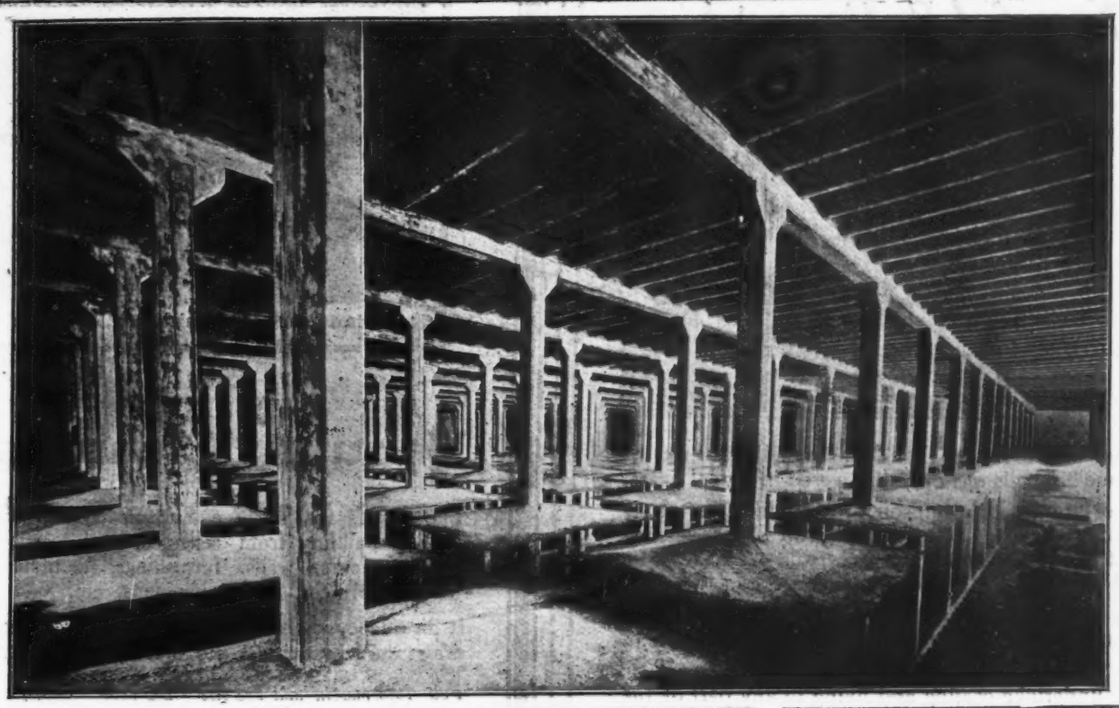
This book contains such an immense amount of very valuable technical detail and data that cannot fail to be of great assistance to those engaged in the work of designing framed-buildings that the "tilt" at and "challenge" thrown at formulæ so frequently in its pages is to be regretted. Naturally, the subject of stanchions opens the door to a flood of criticism of "Euler's" and "Rankine's" formulæ and conditions, &c., of the usual kind indulged in by the so-called practical man. The truth is that formulæ are mathematical deductions based upon certain premises assumed. In engineering, like all other fields of work, certain causes give rise consistently to particular consequences, and an explanation of the process is attempted and a theory results. The mathematician can then sometimes deduce the relative importance of the several factors involved and express the same as a formula. For example, take the case of a beam transversely loaded: a series of experiments may be made by supporting the bar upon props at a certain distance apart, and then loading it at the centre and measuring the deflection produced at the centre. From such an experiment it is easy to deduce that each load divided by the deflection it produces will give a constant quotient, up to a certain load, after which the proportionality fails. By varying the span between the props, the same law between deflection and load will be noted, but the quotient obtained will be different, thus showing that length is a factor in the determination of deflecton just as much as the load. By continuing the investigation, deflection in the end will be found experimentally to depend upon—load; length between the supports; character of end fixings; the shape and dimensions of the cross-sections of the bar; and upon the material and its quality of which the bar is made. The theory of simple bending leads to the same conclusions. Such a process as this must be followed in every case before an equation can be formed. All this it must be assumed is within the knowledge of the author, and if so, it is difficult to understand why so much space has been expended in criticism of "Euler's" and "Rankine's" and other formulæ. The conditions under which Euler's formulæ has been arrived at should be stated fully, and then, in any actual case, the competent designer can see how far the actual conditions differ from those assumed, and modify the results proportionately. Practically all engineering formulæ must be treated in this way. Reams of paper have been used to show that "E" determined by means of a tensile stress experiment differs from that obtained by breaking a bar of the same material by a transverse load; yet, if the conditions under which the formulæ alone holds are appreciated, then it would be realised that "E" could not be safely calculated from the results of an experiment in which the conditions assumed are violated.

It is a pity that, when dealing with roof design, an example of a shoe designed so as to eliminate the tendency to buckle, as shown in Fig. 197, was not included in Figs. 289 and 290. It may be, as the author points out on page 230, that friction between the parts reduces the effectiveness of the buckling couple; yet the young designer should have seen how the couple can be, when desired, reduced to insignificance.



Pulpit, St. Wilfred's, Bradford.
The late TEMPLE MOORE, Architect. (*See* page 37.)

* "*Structural Steelwork*." By Ernest G. Beck. London: Longmans, Green, Ltd. Price 21s. net.



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CEMENT WATERPROOFER

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The above photograph, taken in October, 1913, depicts the southern half of this huge reservoir, which holds 18,000,000 gallons. The cement waterproofer we manufacture under the above brand was chosen for this work after the City Engineer had conducted exhaustive tests. Twelve cement waterproofing mediums were tested, amongst them being some of German and American origin. Our product was the only waterproofer which satisfactorily withstood the test, and we were awarded the contract for the supply of over 40 tons of the powder.

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BRITISH and apart from patriotism, THE BEST!

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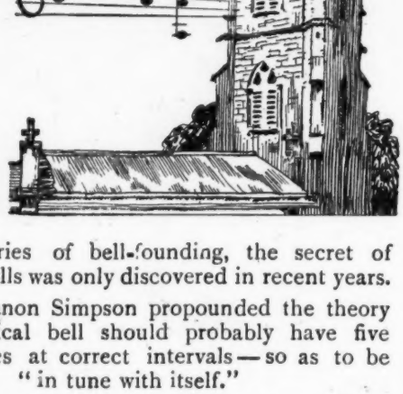
The Secret of Tuneful Bells



After centuries of bell-founding, the secret of "tone" in bells was only discovered in recent years.

The late Canon Simpson propounded the theory that a musical bell should probably have five distinct notes at correct intervals—so as to be "in tune with itself."

We have found how to put this theory into practice in the re-casting of old bells and the making of truly musical church peals.

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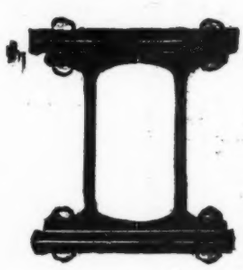

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HOLLOW BRICKWORK.

IN the course of a paper read before a recent meeting of the Clayworkers' Institute, Mr. S. PHILLIPS DALES, M.S.A., dealt with the subject of hollow brickwork, especially as applied to walls. The greatest difficulty in the question of absorbency, he said, was capillary attraction. With a sufficiently absorbent material, and with cavities sufficiently small and adjacent, it was quite possible to make water run uphill on account of the adhesion of the particles to one another. Gravity and density were preventatives to this action, and in the metallic cavity wall-tie these were both fully employed so long as corrosion of the tie was prevented and mortar droppings were kept off it.

Hollow bricks should be made to absorb considerably less than 10 per cent. of their weight in water if it could be managed. Some concrete block systems provided for as many as four cavities in the thickness of the section, but he thought that, having regard to the necessity for compressive and flexible strength, a single cavity would be better. In the width of the cavity lay the chief chance of using the countering force of gravity, as it admitted of "webs" at an upward angle of sufficient length from the outer to the inner shell. The question of variation of temperature was exceedingly important. If the outside temperature were greatly lowered, and that on the inner space heated, the absorption would be greatly accelerated, so that in the choice of material the problem was added to by the necessity for choosing one giving great density, and at the same time having the greatest non-conductivity. If, however, the inner service of a section of high density were highly serrated or so roughened as to create a surface in itself cellular, probably the best way out of the difficulty would be found.

With regard to the question of the requisite strength of the vertical shells to obtain the necessary compressive and lateral strength, he thought that one-third of the total section previously allowed as a maximum cavity by many authorities was far too stringent, even for concrete construction. Providing hollow bricks were maintained in a true vertical position their strength was enormous.

For speed of erection, walls formed of light panels between piers were better than walls of equal thickness throughout. The piers might be of hollow brick tubes filled with aggregate, and such a construction would withstand the most severe tests. In one case, three skilled bricklayers with two labourers erected 260 ft. of hollow brick walling, 8 ft. 6 in. high, including a damp course, in five working days. If the piers were reinforced with a centre bar, it would be possible to erect the piers, fix hollow-brick floors and the roof exactly as steel-framed buildings were built, fixing the wall panels afterwards. If a substantial groove-and-tongue joint were adopted, and a proper bonding of the blocks were maintained, there need be no fear as regards lateral strength in a wall of even thickness. In pier and panel walls, however, it would be necessary to tie the panels to the piers by means of short lengths of light hoop-iron wherever the bed joints coincided. He did not think anything was gained by an elaborate system of bonding the panels to the piers, light hoop-iron, such as packing-case iron, being ample.

For domestic work the continuous wall of even section would be best. Much had been lost by over-standardisation, and in order to provide ample opportunities for satisfactory arch treatment, plenty of quoins, bonding blocks, reveals, &c., must be provided, so that the best tradition of ordinary brick walling and masonry might be kept.

In hollow brick work, with a view to simplicity of erection, it would be well to aim at producing an interior surface which admitted of one-coat plastering. The problem was greatly increased by the fact that every mass had an attractive or repellent force over other bodies. Tiny particles of dust or carbon were attracted or repelled over a plastered surface exactly where certain bodies had, or had not, occurred behind the plastering. The same kind of polarisation occurred in the proximity of electric wiring, or pipes which varied the temperature of the surface. For similar reasons, every mortar joint of hollow brickwork would show through the plastering if the problem was not taken seriously in hand. This trouble, and also that of condensation on the surface of the plastering, might largely be mitigated by roughening the surface so as to make the density, surface temperature and porosity as nearly as possible that of the mortar joint.

ROYAL SANITARY INSTITUTE BIRMINGHAM CONGRESS.

THE thirty-first congress of the Royal Sanitary Institute, which is to meet in Birmingham during the week commencing July 19, under the presidency of the Right Hon. Viscount Astor (Secretary to the Ministry of Health), will have under its consideration a very wide range of problems affecting public health and well-being. The programme begins with matters affecting the birth-rate and contains some sixty other subjects upon which information and discussion is desirable. It includes matters affecting Child Welfare, Housing, Industrial Hygiene, and ranges from engineering work—such as road pavements—to the father's responsibility in relation to the home, and the care of the lonely and aged poor.

"Body and Mind" will be dealt with by Sir Frederick W. Mott, K.B.E., F.R.S., M.D. F.R.C.P., in the lecture to the congress; and "Links with the Tropics," by Andrew Balfour, C.B., C.M.G., M.D., B.Sc., D.P.H., in the popular lecture.

Section A—Sanitary Science and Preventive Medicine—will be presided over by Colonel Sir Robert H. Firth, K.B.E., C.B., F.R.C.S.

Section B—Engineering and Architecture—over which Mr. W. E. Riley, F.R.I.B.A., M.Inst.C.E., late Superintending Architect to the London County Council, will preside, will be devoted mainly to discussions of Housing, Urban and Rural; Reconstruction of Slums; School Buildings; House Drainage; and River Pollution.

Section C—Hygiene of Maternity and Child Welfare—will be presided over by Lieut.-Colonel F. E. Fremantle, C.B.E., M.P., M.A., M.B., F.R.C.P.

Section D—Personal and Domestic Hygiene—will be presided over by Councillor Mrs. George Cadbury, O.B.E., M.A.; and

Section E—Industrial Hygiene—will be presided over by Mr. Neville Chamberlain, M.P., and will deal with Industrial Efficiency and Fatigue, Welfare Work in Factories, and the Health of Seamen.

There are seven technical conferences of sanitary authorities and their officers, arranged in connection with the congress. There is a special conference on the work of local authorities, and it is interesting to note that the work of the Birmingham Corporation Departments is to be practically illustrated at the Health Exhibition which is arranged in connection with the congress.

So many of the problems to be discussed affect schemes now under consideration of the Government that it is interesting to know that among the delegates several public departments in England, Scotland and the Overseas Dominions, including the Ministry of Health, are to be represented; and delegates are also being sent by Denmark, France, Holland, Sweden, and, in addition, some 600 delegates from English boroughs, from Portsmouth to Aberdeen. Twenty years ago the Royal Sanitary Institute held a very successful meeting in Birmingham, and since that date the importance of health as a national asset is more generally understood, and the adjustment of the many factors that make for efficiency should be greatly advanced by this large and representative meeting of experts.

TRADE BOARDS AND INDUSTRIAL COUNCILS.

MR. E. H. C. WETHERED, O.B.E., at the recent annual meeting of the Brush and Broom Trade Board, of which he is chairman, delivered an interesting address on bodies set up with the object of obtaining better relations between employers and employed. He pointed out that the creation of a Trade Board under the Act of 1918 does not stigmatise the industry concerned as a "sweated industry," as, although the Act of 1909 empowered the Board of Trade to set up a Trade Board in any trade where it was satisfied that the rates of wages were exceptionally low as compared with other employments, the later Act empowers the Minister of Labour to apply the Act in cases where he is of the opinion that no adequate machinery exists for the effective regulation of wages.

Referring to the relative positions of Joint Industrial Councils and Trade Boards, he mentioned the difficulties experienced by some of the former bodies in making their decisions effective. The Joint Industrial Councils are voluntary organisations and, as they have no legal status, their decisions have no legal sanction. The effective control exercisable by such a body has obvious limitations, particularly when a large number of employers in the industry concerned are not associated and upon whom the decisions cannot be enforced. Several of these Councils have already applied to the Ministry of Labour for compulsory powers to enforce their decisions on all employers within their particular trade, whether associated or non-associated. Trade Boards, on the other hand, are statutory bodies appointed by the Minister of Labour under the Trade Boards Acts of 1909 and 1918, and their decisions on all competent matters, when confirmed by the Minister of Labour, become part of the law, and can, if necessary, be enforced on all employers to whom the order relates by action under the Summary Jurisdiction Acts. Mr. Wethered expressed the opinion that the solution would probably be found in the establishment of Trade Boards alongside the Councils, so that their decisions could be enforced, and the Councils, relieved from controversial questions relating to wages claims, could devote themselves to the politics of their industry without the risk of being involved in acrimonious debates.

The Act of 1918 lays upon Trade Boards the duty of fixing minimum rates of wages for time-work and they also have powers to fix minimum piece-work and overtime rates, to provide for training employees, and to fix maximum working hours. Most of the Boards are fixing flat rates of wages to apply throughout the country, but they have powers to fix either national or district rates.

LIFT ACCIDENTS.

DR. WALDO, in summing up to the jury on the occasion of a recent inquest on the victim of a lift accident, said lifts were dangerous devices, and could not be trifled with. Deaths due to accident in connection with lifts were frequent, and with their increasing use they gave rise to more deaths. The majority of the deaths were caused by falls through lift wells, and the remainder were due to crushing. Defects in the doors and in the mechanism of the lifts, coupled with their inefficient and careless use or abuse, mostly led to these preventable deaths. If such unnecessary loss of life and limb were to be curtailed or prevented, all lifts should be placed under compulsory regulation and examination by some responsible authority. As a first step, compulsory registration and examination of lifts before use by, say, the Board of Trade, Home Office, or other central body—followed by periodical inspection by the local authority—was urgently needed He (the Coroner) had for a long time advocated the introduction of an industrial museum for educational and training purposes filled with safety mechanical devices, and he was pleased to hear that such a museum was at last in preparation.

HOUSING AND TOWN-PLANNING NOTES.

Cost of Sites for Housing Schemes.

The Scottish Board of Health announces that the Valuation Office of the Board of Inland Revenue is available to conduct negotiations with landowners on behalf of local authorities in cases of dispute, and in the purchase of sites for housing; and as a result of the purchase of sites for housing, a very considerable reduction has been effected on the prices asked by owners of land. By October, 1919, the Valuation Office had effected a reduction of £29,755, or 38 per cent., on the prices asked by owners, the adjusted price averaging £141 per acre. By May 31, 1920, the total reduction effected was to £102,241, the average rate per acre adjusted being £171. The percentage of reduction effected decreased to 27 per cent., attibutable to the fact that owners, profiting by experience gained from previous cases, have refrained from asking such high prices for the land as formerly. These figures, says the Board, should encourage local authorities who have not already done so to entrust negotiations for the purchase of sites to the district valuers.

The Housing Subsidy.

The Ministry of Health announces that the Housing (Additional Powers) Act, 1919, which authorised grants to private persons building houses, lays down the condition that the houses must be begun within twelve months from the passing of the Act, viz., December 23, 1919, and completed within that period or such further period not exceeding four months, as the Minister of Health may in a special case allow. It is found that this period is not long enough for the erection of the houses which might otherwise be built under the stimulus of the subsidy, and the Government has decided to introduce legislation to extend the period for a further year. It is not proposed that the aggregate amount of £15,000,000 authorised by the Act for grants shall be increased.

New London Housing Official.

Mr. G. W. Humphreys has been appointed Administrator of the Housing Development Schemes under the L.C.C., at £2,000 a year. At the weekly meeting of the Council on Monday Mr. C. G. Ammon criticised the proposed appointment and the further suggestion that Mr. Humphreys be given the new position and salary in addition to his present appointment as chief engineer. Mr. G. H. Hume pleaded for forbearance, saying they were only just realising the full magnitude of the task. Mr. H. J. A. Glanville stated his strong objection to the holding by any official of a dual full-time appointment and a dual full-time salary. He moved an amendment to omit the clause relating to the proposed salary, but this was defeated by a large majority.

WEEKLY HOUSING RETURN.

New housing schemes submitted to the Ministry of Health during the week ended, June 26, numbered 98, bringing the total to 10,535 (71,000 acres). The schemes approved now number 6,919 (51,000 acres). Seventy-eight lay-out schemes were submitted and 70 approved, bringing the total submitted to 4,995 and the number approved to 4,409. House plans representing 2,872 houses were submitted, and plans for 2,856 approved. The total number of houses represented in all the plans now submitted is 225,088, and in the plans approved 211,213. Tenders were submitted for 3,174 houses. Tenders for 4,318 were approved, bringing the total number in tenders submitted to 132,697, and in tenders approved to 118,721. Contracts have been signed for some 62,700 houses.

Nearly 400 local authorities have received sanction to issue Housing Bonds, and over £5,000,000 had been raised in this way by the end of May. Money is being raised also by the issue of stock or mortgages, and altogether the public is investing in securities for housing at the rate of £10,000,000 a month. Housing bond campaigns have been begun in Nottingham and Rochdale; £70,000 was subscribed at the first meeting in Rochdale. Bradford has issued bonds for £100,000 during the last fortnight, bringing its total to £625,000. Ipswich has raised £108,000, and in the West, Plymouth leads with £200,000. The bulk of the money is being subscribed by private investors, although some business firms and industrial organisations have made large contributions. Messrs. Brunner, Mond have promised £100,000 and Messrs. Courtauld £34,000 to their local councils. The Boiler Makers' Society has subscribed £30,000 at Newcastle-on-Tyne, and the National Union of Railwaymen £50,000 at Derby.

Applications.

Applications received from local authorities during the week ended June 26 include the following:—

SITES.

URBAN.—Aberavon, 284.55 acres; Birmingham, 156.25; Brighton, 12.25; Northampton, 103.91; York, 30.32.

RURAL.—Wembley, 10.49 acres.

LAY-OUTS.

URBAN.—Birmingham, Bodmin, Cardigan, Coseley, Darlaston, Derby, Dodsworth, Farsley, Gellygaer, Glyncorwg, Grays Thurrock, Handsworth, Hastings, Haywards Heath, Ilfracombe, March, Nottingham, Ottery St. Mary, Royston, Shoreditch.

RURAL.—Alcester, Amesbury, Axminster, Barnard Castle, Bromsgrove, Carmarthen, Castle Ward, Cheltenham, Chesterfield, Glanford Brigg, Godstone, Grantham, Lutterworth, Lymington, Northleach, Ongar, Plympton St. Mary, St. Germans, St. Thomas, Salisbury, Sedgefield, S. Stoneham, Stockbridge, Thornbury, Wigton, Wilton.

HOUSE PLANS.

URBAN.—Birmingham, 194 houses; Bodmin, 40; Brentford, 58; Coseley, 194; Devizes, 28; Dodsworth, 66; Elland, 57; Eston, 20; Farsley, 32; Gosforth, 28; Gray's Thurrock, 94; Hammersmith, 308; Hay, 18; Hayward's Heath, 20; Hebburn, 241; Holme Cultram, 50; Ilfracombe, 14; Kingston-on-Thames, 28; Leeds, 452; Lymington, 66; March, 10; Prestwich, 84; Rawmarsh, 100; Redcar, 14; Shoreditch, 16; Wellingborough, 2.

RURAL.—Axminster, 8 houses; Berkhampstead, 4; Bromsgrove, 50; Castle Ward, 20; Cheltenham, 22; Congleton, 10; Doncaster, 44; Glanford Brigg, 4; Godstone, 12; Grantham, 4; Henley, 8; Hursley, 10; Keighley, 12; Llanelly, 12; Lutterworth, 18; Magor, 72; Malling, 6; Nantwich, 12; Northleach, 10; Ongar, 8; Pewsey, 152; St. Germans, 24; St. Thomas, 8; Stockbridge, 12; Tavistock, 12; Tiverton, 2; Welwyn, 6; Wilton, 12; Winchcombe, 60; Woodstock, 4.

Approvals.

Approvals given during the week include the following:—

SITES.

URBAN.—Abram, 14.78 acres; Liverpool, 160; Louth, 22.04; W. Bridgford, 44.23.

RURAL.—Hemsworth, 30.18 acres; Llandilo Fawr, 13; Wrexham, 16.7.

LAY-OUTS.

URBAN.—Barnes, Beckenham, Birmingham, Buxton, Coseley, Dalton-in-Furness, Darlaston, Dodsworth, Earby, Esher and the Dittons, Grays Thurrock, Greenwich, Handsworth, Hayward's Heath, Ilfracombe, Kirkham, March, Melton Mowbray, Scarborough, Shoreditch, Waterloo-with-Seaforth.

RURAL.—Alcester, Blaby, Bradfield, Brixworth, Bromsgrove, Camelford, Chelmsford, Cheltenham, Chesterfield, Glandford Brigg, Isle of Thanet, Lutterworth, Malling, Ongar, Sedgefield, Spalding, Spilsby, Ticehurst, W. Lancashire, Wilton, Wirral. COUNTY COUNCIL.—Lancashire, 2.

HOUSE-PLANS.

URBAN.—Abergavenny, 16 houses; Abingdon, 54; Barnes, 6; Birmingham, 194; Buxton, 3; Chingford, 70; Chorley Wood, 4; Coseley, 194; Dodsworth, 66; Elland, 57; Enfield, 12; Eston, 20; Farsley, 32; Gray's Thurrock, 94; Halifax, 164; Hayward's Heath, 20; Ilfracombe, 14; Kingston-on-Thames, 28; Leeds, 452; Lymington, 66; March, 10; Marsden, 105; Masham, 12; Northampton, 98; Peterborough, 50; Rawmarsh, 100; Redcar, 14; Richmond, 105; Shoreditch, 16; Todmorden, 6.

RURAL.—Ampthill, 4 houses; Axminster, 8; Bradfield, 22; Brixworth, 10; Bromsgrove, 50; Chelmsford, 6; Cheltenham, 22; Daventry, 6; Glanford Brigg, 4; Hursley, 40; Isle of Thanet, 8; Keighley, 12; Long Crandon, 4; Lutterworth, 18; Malling, 8; Ongar, 8; Pewsey, 304; St. Ives, 4; Ticehurst, 45; Tiverton, 2; Wallingford, 4; W. Lancashire, 24; Wilton, 38; Winchcombe, 68; Wirrall, 26. COUNTY COUNCIL.—Lancashire, 10.

Tenders.

Tenders approved during the week include the following:—

URBAN.—Abingdon, 22 houses; Aylesbury, 8; Bampton, 10; Bletchley, 24; Blyth, 1,000; Burnham-on-Sea, 18; Bury St. Edmunds, 50; Buxton, 5; Carlton, 12; Chesterle-Street, 100; Dawlish, 20; Gt. Berkhampstead, 4; Greenwich, 18; Halesworth, 14; Hanwell, 115; Hayfield, 22; Henley, 36; Huthwaite, 6; Irlam, 544; Linthwaite, 30; Lye and Wollescote, 10; Newmarket, 20; New Mills, 24; Newport, 60; Northampton, 118; Peterborough, 50; Plymouth, 500; Rawmarsh, 100; Redcar, 14; Smallthorne, 42; Swinton and Pendlebury, 230; Tiverton, 35; Truro, 35; Warminster, 30; Worksop, 24.

RURAL.—Bedford, 6 houses; Belvoir, 8; Bradfield, 2; Caxton and Arrington, 6; Chapel-en-le-Frith, 96; Chelmsford, 25; Chichester, 12; Church Stretton, 14; Eaton Bray, 4; Ely, 4; Gloucester, 6; Godstone, 16; Hardingstone, 4; Hertford, 24; Highworth, 10; Hitchin, 44; Kingswinsford, 45; Kiveton Park, 82; Lexden and Winstree, 20; Malpas, 26; Melbourn, 6; Newton Abbot, 60; Northwich, 240; Runcorn, 24; St. Ives, 6; Samford, 6; Tendring, 60; Tiverton, 35; Westhampnett, 11; Wincanton, 10; Wycombe, 8. COUNTY COUNCILS.—Huntingdon, 2; Yorkshire (E. Riding), 2.

THE HOUSING SITUATION IN ENGLAND AND IN THE UNITED STATES.

IN a thirty-page pamphlet by Mr. F. T. Miller (President of the F. W. Dodge Co., New York) we have a very interesting comparison of the treatment of the housing problem in England and America. The author has much to say in criticism of our methods. Reviewing the position here, it is stated that 99,905 dwellings were erected in England and Wales in 1906, and only 45,632 in 1914. The causes leading up to the shortage of houses is said to result from the fact that England is a nation of tenants; the tax system (taxes paid by the tenant and increased with rental) is blamed; and, in addition to the more immediate causes attributable directly or indirectly to the war, it is alleged that our present legislation kills private enterprise. "Starting with a most unfortunate land taxation and tenantry system, English legislation has worked generally toward alleviating conditions through subsidies and compromises rather than through curing them . . . by a division of property among the people." Education for home ownership, it is stated, should have begun 30 years ago. The elaborate machinery set up by the Ministry of Health

is criticised, and a case is cited where a municipal authority, after 18 months' negotiation, secured permission to erect ready-made houses, but was later advised that these must conform to certain conditions. When the impossibility of change had been demonstrated, it was found that the houses had been sold abroad.

These views coincide closely with many expressed by ourselves over a long period. It is admitted that in the United States house building decreased from 1907 onwards, and that several years will be required to make good the shortage. Increased costs and labour troubles have caused the abandonment of some American housing schemes, and though, generally, war restrictions and diversions are put down as the main cause of the present shortage, it is stated that the tenantry system, so prevalent here, and growing in the United States, militates against progress, and that capital is drifting away from building. The widest possible division of land and real estate is advocated as increasing the tax-paying and earning power of the population. Bank loans are strongly advocated for long terms at low rates to finance house building, while mutual building and loan associations, already an important factor, are to be encouraged. Finally, it is stated that there, as here, most small house erection has in the past been in the hands of the private builder. The author concludes by saying: "The British method killed private enterprise, drove capital from the field of investment, and made a bad social system worse . . . Philanthropic legislation may be the undoing of the Anglo-Saxon race."

It is often well to endeavour to see ourselves as others see us, and these American views should be carefully considered by those whose only method of meeting the housing situation appears to be by a system of doles which do anything but encourage labour to come forward on its own behalf and work for a personal objective—the making of homes, not for unknown masses, but for known individuals.

THE INCREASE OF RENT BILL.

THE Increase of Rent Bill was read a third time in the House of Lords on June 30 and passed into law on July 2. We propose, when the Bill is printed, noting the amendments introduced, so that our readers may have before them, with the former articles which have appeared, the measure as a whole. On the motion of the Lord Chancellor, a new clause was added to clause 5, "Where a landlord has obtained an order or judgment for possession or ejectment under this section, on the ground that he requires a dwelling-house for his own occupation, and it is subsequently made to appear to the court that the order was obtained by misrepresentation or the concealment of material facts, the court may order the landlord to pay to the former tenant such sum as appears sufficient as compensation for damage or loss sustained by that tenant as the result of the order or judgment." This clause represents the topsy-turvy legislation of the present day. If a landlord has wilfully mislead a court of justice, he is amenable to the criminal law; but to make him pay compensation to a tenant, when the landlord is dealing with property of his own after the tenancy has (except for this Act) come legally to an end, is a strange piece of legislation to emanate from the House of Lords.

In the House a good deal of discussion was evoked by the clause which enables the Lord Chancellor to make rules, and especially with regard to ordering hearings to be private, but the clause apparently was carried. When the Act is printed it will be easier to see how the matter stands, but it appears that the Lord Chancellor justified such a provision on the ground that it was modelled on the Courts Emergency Powers Act, 1915, and that this Bill was war legislation produced by the same conditions.

We fail to see how any advantage can be gained by dealing with the respective rights of house owners and their tenants *in camera*; we use this term, for the Lord Chancellor instanced the Divorce Court himself. Such a course can only lead to a multiplication of applications, a variation in the decisions, and, consequently to greater uncertainty than even at present exists. This perpetuation of war legislation now the war is over is most prejudicial to peaceful reconstruction, and is to be deprecated. The creation of special tribunals and the curtailment of the rights of the public has continued too long, and its prolongation in a new statute which is to remain in force for three years can have no justification. As it is, there are many Statutes, or parts of Statutes, in operation "for the duration of the war and six months afterwards," which remain in force with no reason whatever, because the Government has not officially declared the war at an end. Yet we have practically been at peace for over a year, and the necessity which called these statutes into being no longer exists. It is absurd to re-construct with one hand and with the other to pen war measures. It is useless to preach a return to normal conditions, less wages, more work and economy, if the Legislature itself treats the war emergency as still existing, and passes war measures.

THE case, Goldsmith *v.* Orr (*Builder*, February 27), has been carried to the Court of Appeal, and the decision has been affirmed, but only by a majority of the Lords Justices. The point raised in the case was at what date the increase in rent was to be deemed to have been made. The house had been let to the defendant in 1912 for a term of three years at a rental of £50. At the end of the term, the tenant had continued in occupation, but in October, 1918, an agreement had been come to between the parties that the tenant should continue on at the same rent until March, 1919, and then for one year at an increased rental of £65.

The tenant in these proceedings contended that under Section 4 of the Act of April, 1919, he was only liable to pay a rent increased by 10 per cent. This raised the question whether the rent had been raised since December 25, 1918, the date named in the section, as the agreement was made before that date, but it was not to take effect until after that date. The majority of the Court held that the date when the increase of rent is made is the date when "it becomes effective." From the judgment of Lord Justice Bankes a question may still arise as to whether this expression means when the rent begins to accrue or when it is due, but probably the date will be when it begins to accrue. This decision will apply to the new Bill, as it will apply to increases of rent made after any dates fixed by the Bill.

CONCRETE WORK AT RICHBOROUGH.

THE following is an abstract of a paper on "The Mystery Port, Richborough," read by Major Halstead Best, R.E., F.I.S.E., at a meeting of the Concrete Institute.

THE SITE.—Richborough occupies a site which in early 1916 was a flat marshy piece of land, stretching between Sandwich and Pegwell Bay, yet in less than three years this barren, marshy, more or less forgotten, part of England was turned into a great base for transportation, a camp actually housing over 17,000 soldiers, workshops capable of tackling repair works of practically every description, and in addition a home for the naval "Mystery Ships" in the form of a "Mystery Port." The total area of land acquired at Richborough by the War Department was about 4,000 acres, and the area actually occupied by docks, wharfs, and camps is over 3¼ square miles.

THE USE OF CONCRETE.—The various concrete blocks were made in several yards distributed about the area at Richborough, and set apart as block-making yards, having land adjoining for maturing purposes. The cement and aggregate were mixed in varying proportions depending on the class of walling required, and on whether the finished work would be very much exposed. The mixings varied from 1 of cement and 5 of gravel to 1 of cement and 9 of gravel. The concrete mixers were erected on a raised platform so as to deliver the mixing by means of a shoot to a position near the block-making machines. The pallets having been placed in position the mixture in a semi-dry state was well punned in the mould, and the green blocks removed on their pallets to the drying ground. Here the blocks, if the atmosphere was at all dry, were well watered through a fine hose, otherwise an accelerated drying would take place, resulting in the development of visible cracks which would render the blocks liable to be damaged easily during transit to the building site. A very large quantity of the aggregate used in making the concrete, both for mass work and for concrete blocks, was obtained from the bottom and sides of what is now known as the "North Lake," but what was originally a gravel pit opened in connection with the Dover Harbour Works.

Another important feature in the Richborough concrete block yards was the manufacture of reinforced concrete blocks for making pill-box emplacements.

Several water towers were erected of reinforced concrete, the cost of which, based on cement costing 54s. per ton, sand 4s. per cubic yard, gravel 6s. per cubic yard, and steel rods at £25 per ton, was for the 40,000 gallon capacity tower £732, the cost per cubic ft. working out as follows:—

	s.	d.	
Reinforced concrete in foundations	2	9	per cub. ft.
Reinforced concrete in structure	3	1½	„ „
Reinforced concrete in tank	3	4¼	„ „

The unit stresses were:—Steel in tension 16,000 lbs. per sq. in., concrete in compression 600 lbs. per sq. in., and $m = 15$.

In addition, a large number of reinforced concrete piles were made, most of these being used in the construction of a dock at Grain Island, Yantlet Creek, Isle of Sheppey.

SEWAGE DISPOSAL.—The scheme was designed to deal with the sewage from the various camps, allowance being made for possible further extensions to a maximum of 25,000 persons. The water supply was taken at 10 gallons per head; and owing to the flat nature of the land, and, therefore, the lack of suitable gradients, the sewage gravitates to a central pumping station whence it is pumped to the disposal works, treated, and the effluent discharged into the River Stour.

In order to avoid having to construct large underground tanks, owing to the difficulty that the construction of these would entail in such a water-logged area, it was decided to lay the main drain, which is about 830 ft. in length, of 33 in. diam. cast-iron drain pipes, thus providing a storage capacity for about 36,000 gallons of sewage. The sewage is then lifted by means of a duplicate set of 6 in. centrifugal stereophagus pumps, motor driven; an additional 6 in. centrifugal pump, engine driven, is installed in case of emergency. At the sewage works the usual screening, detritus chambers, sludge tanks, and sedimentation tanks are installed. The sludge in the tanks is lifted to the surface of the ground for distributing over the sludge area by means of the hydrostatic head of the liquid in the sludge tanks. Provision was made for the sludge to gravitate to hopper barges in case it was considered necessary to dump at sea.

WATER SUPPLY.—The main supply was through a 6 in. cast-iron main from the Sandwich Corporation Reservoir at Woodnesborough, having a length of 3.18 miles, a head of 125 ft., and a delivery of 342,000 gallons per 24 hours. At Pearson's Wharf the pipe was reduced to 3 in. diam., and connected to an existing 3 in. main from Ramsgate and continued for a distance of .82 mile, at the end of which it gave a calculated discharge of 111,000 gallons. Also, in addition, several small installations, such as fire services, power house circulating mains, and water services for constructional work, were installed.

THE BUILDING TRADE.

ROADS FOR MODERN TRANSPORT REQUIREMENTS.

MR. H. T. CHAPMAN, M.Inst.C.E., County Surveyor of Kent, in a paper read before a recent conference of municipal engineers at Olympia, said that it was impossible to lay down any hard-and-fast standard width for road reconstruction, as no one could foresee future alterations in traffic or local circumstances; but it would be better not to err in the minimum width, and should it be found that too much land had been acquired or reserved, it would possibly be found that the money expended had not been badly invested. The majority of our roads were not planned or laid out, but were simply evolved from tracks, and the consequence was that we had so many tortuous, devious lengths now.

The necessary adjuncts to all good roads were—(*a*) Subsoil and surface water drainage; (*b*) adequate foundation; (*c*) lateral support; (*d*) suitable surfacing. Whatever type and volume of traffic used the roads, suitable subsoil and surface drainage were essential, as the action of water deteriorated and diminished the effective value of all kinds of foundation and surfacing materials. The greatest difficulties were presented in draining stiff subsoils, such as clay, also unstable ones, including bog land or peaty ground. In the case of the former, longitudinal, cross and herringbone drains of permeable rubble, with the trenches filled in with ashes or other permeable material, leading into pipe drains or ditches, were most suitable, and in the latter, open jointed pipe drains laid on and covered with brushwood or fascines would serve the purpose.

For sett-paved roads concrete foundations of adequate thickness were recognised as being the most suitable for all conditions of traffic. Should the subsoil be unstable or yielding, then the concrete foundation would be in the nature of a raft or slab, and subject to tensile strains. Reinforcement was desirable in such cases, but on hard, firm subsoils a greater thickness of plain concrete might be preferable. In the case of bituminous surfacings, including tar-macadam, asphalte carpeting, &c., bituminously cemented foundations or base coats were preferable to concrete. Where the surface was resilient there should be some compensating resiliency in the base or foundation, and when the surfacing was non-resilient the foundation should possess the same characteristics.

Generally speaking, in the case of urban roads, ample lateral support was provided by kerbs and channels, but this was not so on most rural roads. If bituminous surfacings consisted of tar-macadam and carpetings, unless the sides were well supported to hold up the material to the traffic and prevent water penetrating, the results were soon self-evident. In the case of macadam surfacing, the sod edging of the verges and the foot of banks formed some lateral support, but not usually sufficient, especially when the carriageways were narrow and the sides much traversed by wheels.

Having regard to all circumstances, bituminously-coated or carpeted "double coat" road surfacing was the most suitable for all classes and volumes of traffic. Except the binders, including pitch and tar and bitumen, all the materials could, generally speaking, be obtained locally, and so-called "inferior" materials, and even waste products, could be used as aggregates. For the under or base coat, generally speaking, comparatively soft stone, scarified macadam, or selected clinker mixed with pitch and tar and laid hot might be the best. For the carpet, which should be put on as soon as possible after the base coat was completed and not be less than 1½ in. in thickness, the necessary grading of the sand or clinker and the proper proportion of bitumen were the essential factors for success. This should be laid at a temperature of about 300 deg. F. and very carefully rolled, after which the traffic might be allowed over it in a few hours.

From observations of trial sections of concrete surfacing, the author had come to the conclusion that 6 in. of 6 to 1 concrete was not adequate to stand the action of quick, heavy traffic, also that expansion joints were unnecessary when surface reinforcement was provided. Eight inches of concrete, the lower 6 in. consisting of a 6 to 1 mixture topped with 2 in. of 3 to 1 concrete, the reinforcement to be placed between the two layers and the upper one laid before the initial set had occurred in the lower one, would meet all the requirements of traffic, and should last with little or no repair for many years. He was not in favour of surface tarring concrete, as the only benefit arising therefrom was to cause a cushion for horses' shoes and perhaps slightly to minimise the jar.

QUANTITIES FOR REINFORCED CONCRETE.

QUANTITY surveyors have, in the past, been as a body rather shy about reinforced concrete work and this, no doubt, has been largely due to the position of patentees who have generally submitted prices involving, of course, the necessary measurements from architects' drawings in their own places of business. Now, however, so much work is done either without any patent system or by using such system under royalty that the inclusion of this work in an ordinary bill, taken out in detail, should be looked upon as part of the work of every surveyor. The Concrete Institute and the Quantity Surveyors' Association have, therefore, done a valuable piece of work in producing a report on standard methods of measurement for reinforced concrete building. This report, which has before publication benefited by the scrutiny and suggestions of the representative bodies of architects, surveyors, and builders, comes before the industry as an authoritative scheme, which will doubtless be adopted in general practice, and do much to unify the pricing in this material.

The report—a small pamphlet of thirteen pages—is very concise, and tells a surveyor exactly the kind of things he wants to know, *e.g.*, how the work is to be described and separated and the kind of measurements to be applied to the various sections of it. Necessarily it deals mostly with *in situ* work, but four of its pages are devoted to pre-cast work, kept separate as being usually subject to different conditions of labour and transit.

The division under trades is discarded, and the carpentry in form-work, the concrete and steel are to be billed together from the respective sections, such as foundations, walls, beams, slabs, stairs, and so on. The height of each floor above a given datum is to be stated, and the shape and size of each member described. As regards form-work, only the surface in contact with the concrete is to be measured and not the actual boarding, and apparently no thicknesses of timber are given, the contractor having to add for all necessary battens and struts. Cases have occurred in which form-work has been put in altogether too light, and though it might overload a bill to deal with this matter in every detail, no ambiguity should exist as to what is necessary to obtain complete rigidity until the concrete has set. Under "Steel" no mention is made that this is to comply with any particular specification as regards quality, but we presume that the British Standard is implied. The report proceeds to describe detailed particulars; thus, under "Pillars" we find; "Describe shape—square, circular, polygonal, &c., if corners are moulded or chamfered. Give number, size and height separating those less than 12 ins. 18 ft. or more across and high." Under "Pre-cast Work," such things as lintels (which we are glad to see properly spelt) slabs and piles are dealt with.

Surveyors generally will be pleased to have this handy little guide, with which builders' estimators should also become conversant.

* "Standard Method of Measurement for Reinforced Concrete." Published by the Concrete Institute. Price 1s. 1d., post free.

BUILDING CONTRACTS AND SPECIALISTS.

ALTHOUGH the proposed National Code put forward by the National Federation of Building Trades' Employers has received some criticism, so far as we have seen attention has not been directed to a point of importance in connection with specialists and others executing any work or supplying any goods for which prime-cost prices or provisional sums are provided in the contract. From time to time under the existing forms of contract considerable litigation has occurred, when either the employer or the contractor has become insolvent, in determining who was liable to the specialist, and we have dealt with this question in articles on October 6, 1916, and March 2, 1917, as well as on other occasions. The difficulty arises in determining who is the principal, and when the contract is not specific upon the point the conduct of the parties has to be regarded and litigation and uncertainty is experienced.

In model forms of contract this question is left open, as a model form is meant to meet all contingencies and is intended to be adapted to the special circumstances of each case, and the difficulties mentioned above arise from parties accepting a model form as it stands, and failing to adapt it. The object of the present observations is to point out that as we read the provisions of the National Code relating to provisional sums, sub-contractors, and specialists, the point that has caused so much litigation in the past will still arise if parties accept the Code as it stands without considering the application of the clauses to their particular requirements. This is not any defect in the Code, but the fault of parties who adopt a common form without considering particular circumstances, and this is the cause of the litigation that has arisen on the above point under existing forms; the form has been adopted without adaptation and without it having been made clear to those contracting under the contract to which of the parties they will be giving credit, with the result that when one of the parties proves insolvent litigation is resorted to in order to make the solvent party liable.

As we read the Model Code, if it is adopted as it stands the same difficulties will occur in determining the above question, and as these forms are intended for the guidance of laymen, and not of lawyers, it might possibly have been useful if an alternative clause had been introduced for use when specialists were employed, making it clear whom the specialist must regard as the principal, the employer or contractor. In the model form put forward by the Ministry of Health for housing, the point seems more definitely dealt with, as clause 31 ("Payments to Sub-contractors") refers to clause 37, in which specialists are included under "sub-contractors," and this latter clause especially provides that payment to the sub-contractors by the employer direct shall not apply or involve any contract between the employers and the sub-contractors or any responsibility or liability on the part of the employers to the sub-contractor. This payment by the employer is one of the elements taken into consideration in determining who is to be considered as principal under the contract, and we do not see that it is so explicitly dealt with in the National Federation's Code. The object we have in view in making the above observations is merely to draw attention to, and invite discussion upon, a point which has involved costly litigation in the past.

BOOKS.

The Housing Problem, its Growth, Legislation and Procedure. By JOHN J. CLARKE, M.A. London: Sir Isaac Pitman & Sons, Ltd. Price 21s. net.

The subject of housing has produced so much literature that the author, perhaps wisely, sets out in his preface the special aims of his book, which is the outcome of studies and research extending over many years. As indicated in the title, the social aspect of housing in its many bearings is predominant, and a vast amount of valuable historical, legislative and statistical information will be found between the covers of this volume. An official of Liverpool University, the author has naturally a good deal to say about the problem as dealt with in his own city, but not to the exclusion of a broad view of the subject. Chapters on early legislation and the Commission of 1884 are followed by accounts of later Acts, and a review of their applications. Dealing with housing by local authorities, it is estimated that in 1913–14 of the five and a half odd million working-class dwellings, only 20,000 had been erected by such authorities. The present position is discussed under the subjects of types of dwellings (the block dwelling being vigorously condemned), overcrowding and its results, and the rural problem. These chapters also contain a great deal of valuable statistical matter. The author then discusses the factors causing the present high cost of buildings, such as dear money, more attractive investments, and the Finance Act of 1909–1910, which, he holds, has had a considerable bearing in decreasing small house building. The uncertainty caused by this Act, and the decision of the Courts in some cases in which equity seems to have been entirely disregarded, are brought to notice, and our concurrence with the author's views on this matter will be familiar to many of our readers. Rates increase, mainly due to requirements of national services, are next considered, and war restrictions and building by-laws are other causes dealt with. The author then discusses the effect of these causes on private enterprise. Turning to the national housing scheme, Mr. Clarke makes a strong plea that the general, if indirect, return to the nation in an improved type of citizen should have full weight given to it, and points to statistics which prove the value of better housing in reducing crime and drunkenness. The present cost of building, the attitude of local authorities, transit and kindred matters receive adequate treatment. Three chapters are devoted to town planning, and two to Acts in this connection. The last 160 pages of the book are given to appendices on the Liverpool movement, the Report of the 1884 Commission and various later enactments. The work involved in the compilation of this volume must have been very great, and it should be of service as a book of reference not only to the student of sociology, but to all concerned administratively with housing. Naturally in a current and growing subject of this kind such a book cannot be completely up to date, and an attempt to keep up with ever-changing legislation has made it a little uneven in places. These minor and almost inevitable blemishes, however, detract but trivially from the value of the work.

Payment By Results.

By a majority of 3,274 (the figures being 11,490 against, and 8,216 for acceptance), the three trade unions representing the employees in the ironfounding, core-making, and metal-dressing industries, have voted against the scheme for payment by results, coupled with the establishment of district minimum rates of wages, and committees giving the men a share in the management. The scheme has been the subject of negotiations for five months, and was recommended for acceptance by the workmen's representatives.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Accrington	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/10½–1/11	
Altrincham	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
Ashton-under-Lyne	2/4	2/4	2/4	2/4	2/4	2/5	2/4		2/0–2/0½	
Barnsley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Barrow-in-Furness	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
Barry	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Bath	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½	1/7½	1/7½
Bedford	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Birkenhead	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0½	
Birmingham	2/4	2/4	2/4	2/4	2/4	2/5	2/4		2/1	
Bishop Auckland	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Blackburn	2/2½	2/2½	2/2½	2/2½	2/2½	2/2	2/2½		1/10½–1/11	
Blackpool	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/10½–1/11	
Bolton	2/4	2/4	2/4	2/4	2/4	2/3	2/4		2/0–2/0½	
Bournemouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Bradford	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Bridgwater	1/9	1/9	1/9	1/9	1/9	1/9	1/9	1/6	1/6	1/6
Brighton	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Bristol	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Burnley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/10½–1/11	
Burton-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Bury	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
Cambridge	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Cardiff	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Chatham	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Chelmsford	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Cheltenham	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½	1/7½	1/7½
Chester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/10½–1/11	
Chesterfield	2/4	2/4	2/4	2/4	2/4	2/–	2/4		2/1	
Colchester	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Coventry	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Crewe	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/8–1/8½	
Darlington	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Derby	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Doncaster	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Dudley	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½		1/11½	
Durham	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
East Glam. and Mon. Valleys	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Exeter	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/6	1/6	1/6
Folkestone	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Gloucester	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/9½	1/7½	1/7½	1/7½
Grantham	1/9	1/9	1/9	1/9	1/9	1/9	1/8		1/6	
Grays	2/4	2/4	2/4	2/4	2/4	2/4½	2/3		2/1	
Grimsby	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Great Yarmouth	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Guildford	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Halifax	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Harrogate	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Hartlepools	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Hastings	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Hereford	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/9½	1/7½	1/7½	1/7½
Huddersfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Hull	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Ipswich	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Lancaster	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/10½–1/11	
Leamington Spa	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Leeds	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Leicester	2/4	2/4	2/4	2/4	2/4	2/4½	2/4		2/1	
Lichfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Lincoln	2/4	2/4	2/4	2/4	2/4	2/–	2/4		2/1	
Liverpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0½	
Llanelly	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
London	2/4	2/4	2/4	2/4	—	2/4½	2/3		2/1	
Loughborough	2/4	2/4	2/4	2/4	2/4	2/4½	2/4		2/1	
Luton	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Maidstone	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Manchester	2/4	2/4	2/4	2/4	2/4	2/3	2/4		2/0–2/0½	
Mansfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/3	2/2½		1/11½	
Merthyr Tydfil	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Middlesbrough	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Newcastle-on-Tyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Newport, Mon.	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Northampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Norwich	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Nottingham	2/4	2/4	2/4	2/4	2/4	2/4½	2/4		2/1	
Oldham	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
Oxford	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Plymouth	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	1/9	1/9
Pontypridd	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Portsmouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Preston	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/10½–1/11	
Reading	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Rochdale	2/4	2/4	2/4	2/4	2/4	2/5	2/4		2/0–2/0½	
Rochester	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/8	
Rugby	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
St. Albans	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/8	
St. Helen's	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
Scarborough	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
Sheffield	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Shrewsbury	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½		1/11½	
Southampton	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Southend-on-Sea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/11½		1/9	
Southport	2/4	2/4	2/4	2/4	2/4	2/–	2/4		2/0–2/0½	
South Shields	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Stockport	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
Stockton-on-Tees	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Stoke-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½		1/11½	
Stroud	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10	1/7½	1/7½	1/7½
Sunderland	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Swansea	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Taunton	1/9	1/9	1/9	1/9	1/9	1/9	1/9	1/6	1/6	1/6
Torquay	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/5	1/5	1/5
Wakefield	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Walsall	2/2½	2/2½	2/2½	2/2½	2/2½	2/3½	2/2½		1/11½	
Warrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
West Bromwich	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/1	
Wigan	2/4	2/4	2/4	2/4	2/4	2/4	2/4		2/0–2/0½	
Windsor	2/–	2/–	2/–	2/–	2/–	2/–	2/–		1/9	
Wolverhampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/10½	
Worcester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	
York	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½		1/11½	

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts iv ; Competitions iv ; Public Appointments lx. Sales by Auction lxiv. Certain conditions beyond those given in the following information are imposed in some cases such as that advertisers do not bind themselves to accept the lowest or any tender ; that a fair wages clause shall be observed ; that no allowance will be made for tenders ; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in ; the name and address at the end is the person from whom or place where, quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

JULY 10.—**Bermondsey.**—REPAIRS, ETC.—Repairs and re-decoration to the United Institution, Parish-street, Tooley-street, S.E., for the Bermondsey Board of Guardians. Mr. Henry H. Reeve, Clerk, 283, Tooley-street, London, S.E.1. Deposit £8.

JULY 10.—**Bromley.**—PAINTING.—For painting and other works at three schools for the T.C. Education Offices, Municipal Buildings, Bromley, Kent. Deposit 10s.

JULY 10.—**Cranstoun.**—ADDITIONS.—Additions and alterations at Cranstoun Public School, for the Middlesex Educational Authority. County Education Offices, 1, India Buildings, Edinburgh.

JULY 10.—**Hoole.**—CONVERSION.—For conversion of residence into offices and Council chamber for the U.D.C. Mr. F. Davies, architect, 17, Newgate-street, Chester. Deposit £2 2s.

JULY 10.—**Machynlleth.**—VARIOUS.—For various works at the Owain Glyndwr Institute. Mr. E. Gillart, clerk, Maengwyn Chambers, Machynlleth.

JULY 10.—**Southampton.**—PAINTING.—For external painting, &c., works at houses in Upper Bugle-street and Roman-street for the T.C. Borough Engineer Town Hall, Southampton.

JULY 10.—**York.**—ALTERATIONS.—Alterations and additions to "The Elms," York (to be used as a Children's Home) for the Board of Guardians. Mr. T. Penty, architect, Lendal Chambers, York.

JULY 12.—**Atherstone.**—HOUSES.—Erection of brick houses—Atherstone (14), Dordon (10), Polesworth (68), Warton (6)—for the U.D.C. Mr. H. J. Coleby, surveyor, 102, Long-street, Atherstone. Deposit £2 2s.

JULY 12.—**Birstall.**—HOUSES.—Erection of about 250 houses, with streets and sewers, for the U.D.C. Mr. Norman Culley, F.R.I.B.A., 13, John William-street, Huddersfield. Deposit £4 4s.

JULY 12.—**Brighton.**—Adaptation of the Employment Exchange at Brighton. His Majesty's Office of Works, Storey's-gate, Westminster, S.W.1. Deposit, £1 1s.

JULY 12.—**Bury.**—PAINTING.—For painting various schools, for the T.C. Borough Engineer, Town Hall, Bury.

JULY 12.—**Chelmsford.**—PAINTING.—Painting and colour-washing at certain schools, for the T.C. Borough Engineer Municipal Offices, Chelmsford.

JULY 12.—**Chelmsford.**—SHED.—The pulling down and re-building a portion of the boys' playing shed at the Trinity-road Council School, for the T.C. Borough Engineer, Municipal Offices, Chelmsford.

JULY 12.—**Kelty.**—HOUSES.—Erection of 16 houses at Kelty, for the Dunfermline District Committee. District Engineer, County Buildings, Dunfermline. Deposit £1 1s.

JULY 12.—**Leeds.**—PAINTING.—Painting and cleaning of schools, for the E.C. Education Offices (Architect's Section), Calverley-street, Leeds.

JULY 12.—**Lewisham.**—HOUSES.—Erection of 86 dwellings for the Metropolitan Borough. Mr. John W. Shuter, Town Hall, Catford.

JULY 12.—**Linton.**—PAINTING.—Painting of 8 pairs of cottages at Linton and 4 at Whittlesford, for the R.D.C. Mr. A. E. Austin, Sanitary Inspector, 4, Hills View, Great Shelford, Cambs.

JULY 12.—**Mere.**—HOUSES.—Erection of houses at Kilmington (12), East Knoyle (12), Stourton (6), Zeals (4), for the R.D.C. Mr. W. Alexander Harvey F.R.I.B.A., 5, Bennett's Hill, Birmingham.

JULY 12.—**Merioneth.**—BUILDINGS.—Erection of (a) Two farm cottages and buildings at Gilan Wen Harlech, and (b) for three farm cottages and buildings at Morfa Mawr, Llanbedr and Pensarn, for the Merioneth County Council. County Land Agent's Office, St. Ann's Chambers, Barmouth.

JULY 12.—**Portsmouth.**—**HOUSES.—Erection of 300 houses on the Portsdown-hill site, being the first portion. Mr. G. Hammond Etherton, Town** Clerk, **the Town Hall, Portsmouth.**

JULY 12.—**Rhondda.**—PAINTING.—Painting of buildings of the Isolation Hospital at Ystrad-Rhondda, including the carrying out of minor repairs, for the U.D.C. Mr. Jacob Rees, Hillside, Pentre. Deposit £1 1s.

JULY 12.—**Stockport.**—ALTERATIONS.—Alterations to Glebe House, Hall-street, for the T.C. Mr. H. Hamer, Borough Surveyor, Town Hall, Stockport.

JULY 12.—**Yorkshire (West Riding)**—PAINTING.—Painting and distempering schools at Conisboro', Bolton-on-Dearne, Barnburgh, Mexboro', and the Divisional Clerk's Office, Mexborough. Mr. W. H. Jones, Divisional Clerk, Education Office, Mexborough.

JULY 12.—**Wiltshire.**—VARIOUS.—For various work at Council Schools. Mr. J. G. Powell, County Surveyor, Trowbridge.

JULY 12.—**Wombwell.**—HOUSES.—Erection of 61 houses, for the U.D.C. Mr. Norman Culley, F.R.I.B.A. 13, John William-street, Huddersfield. Deposit £4 4s.

JULY 12.—**Woodstock.**—ADDITIONS.—Alterations and additions to workshop in connection with the provision of a social club. Mr. H. J. White, 21, Staverton-road, Oxford.

JULY 13.—**Barnes.**—ADDITIONS.—(1) Additions to the Council House ; (2) additions to the lodge at Mortlake Cemetery ; (3) additions to the electricity works, Mortlake, for the U.D.C. Mr. G. Bruce Tomes, Surveyor, Council Office, Mortlake. Deposit (for No. 3) £1 1s.

JULY 13.—**Bethnal Green.**—Repainting and decoration of the exterior and interior of Administrative Offices, Bishops-road, Bethnal Green, E.2., for the Board of Guardians. Clerk to the Guardians, Guardian's Offices, Bishops-road, Bethnal Green, E.2. Deposit £2 2s.

JULY 13.—**Brentford.**—Various works at the Infirmary, Isleworth, for the Brentford Union. Messrs. Dodge & Reid, architects, 120, High-street, Brentford. Deposit £2 2s.

JULY 13.—**Heanor.**—HOUSES.—Erection of 14 houses for the U.D.C. Mr. A. G. Wheeler, architect, Eastwood. Deposit £1 1s.

JULY 13.—**Hove.**—PAINTING.—For external painting at the East Hove and Portland road Schools, the internal distempering of ceilings and walls at the Ellen-street School. Borough Surveyor, Town Hall, Hove.

JULY 13.—**Kent.**—PAINTING, &C.—Painting and repairs at county buildings at Ashford, Gillingham, Hythe, Lydd, Swanley, Seabrook, Sheerness and Southborough Police Stations, for the Kent C.C. County Architect, 86, Week-street, Maidstone.

JULY 13.—**Lexden.**—ALTERATIONS.—Alterations and additions to Stanway Villa, for the Lexden and Winstree Board of Guardians. Mr. George E. Thompson, Clerk, Victoria Chambers, Colchester.

JULY 13.—**Middleton.**—PAINTING.—Painting of the Corporation Electricity Works. Borough Electrical Engineer, Electricity Works, Townley-street, Middleton.

JULY 13.—**Nottingham.**—PAINTING.—For painting various properties for the Estates Committee. Six contracts. Mr. W. F. Williams, Estates Surveyor, Guildhall, Nottingham, Deposit £1 1s. each contract.

JULY 13.—**Shoreditch.**—PAINTING.—Painting and decorating works at the various Model Dwellings Nile-street, &c., for the B.C. Mr. T. L. Hustler, Borough Surveyor, Town Hall, Old-street, E.C.2. Deposit £1 1s.

JULY 13.—**Tottenham.**—HOUSES, &C.—erection of 400 houses and construction of roads and sewers for the U.D.C. Mr. L. R. Guthrie, architect, 10, Conduit-street, W. Deposit £2 2s.

JULY 14.—**Berwick-on-Tweed.**—HOUSES.—Erection of 24 houses of various types and making of roads and sewers, for the T.C. Messrs. Gray & Paterson, Berwick-upon-Tweed. Deposit £1 1s.

JULY 14.—**Driffield.**—HOUSES.—Erection of 2 houses at North Dalton, 4 at Kilham, 2 at Langtoft, 3 at Nafferton, and 2 at Watton, for the R.D.C. Mr. Geo. Harker, Clerk, 33, Exchange-street, Driffield.

JULY 14.—**Eyemouth.**—HOUSES.—Erection of 60 houses in thirty blocks, for the T.C. Messrs. Charles Mitchell & Telfer, architects, 23, Hill-street, Edinburgh. Deposit £1 1s.

JULY 14.—**Glamorganshire.**—PAINTING.—For painting the following county bridges :—Twrch Bridge, Ystalyfera ; Dulais Bridge, Pontardulais ; King's Bridge, Loughor ; Ffrwydwyllt Bridge, Taibach ; Pontygwindy Bridge, near Caerphilly ; Mountain Ash Bridge. Mr. T. Mansel Franklen, Clerk, Glamorgan County Hall, Cardiff.

JULY 14.—**Heywood.**—PAINTING.—For painting (1) technical and secondary school (outside only). County Architect, Preston. (2) Heap Bridge Council School, (3) Heap Bridge C. of E. School. Mr. W. Aspinall, Secretary of Education, Education Office, Heywood.

JULY 14.—**London.**—REPAIRS.—Repairing and maintaining police stations, police courts, houses, buildings, &c., situated in the North-eastern, North-western, and Southern areas respectively of the Metropolitan Police District for 12 months. Police Surveyor, New Scotland Yard, S.W.1.

JULY 14.—**N.E., N.W., & Southern Districts.**—Repairs and maintenance to Police Stations, Police Courts, Houses, &c., in the above areas for the Receiver for the Metropolitan District. Police Surveyor, New Scotland Yard, S.W.1.

JULY 14.—**Nottingham.**—ADDITIONS.—Additions to the Science Block at High Pavement Secondary School. City Architect's Office, Guildhall, Nottingham. Deposit £1.

JULY 14.—**Nottingham.**—PAINTING.—Internal cleaning and painting at the High Pavement Secondary Schools, for the E.C. City Architect's Office, Guildhall, Nottingham. Deposit £1.

JULY 14.—**Preston.**—ALTERATIONS.—Alterations and additions to the County Architect's Office, 16, Ribblesdale-place, Preston, for the Lancashire C.C. County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston.

JULY 14.—**St. Albans.**—HOUSES.—Erection of 100 houses, for the T.C. City Engineer and Surveyor's Office, 96, Victoria-street, St. Albans. Deposit £2 2s.

JULY 14.—**Twickenham.**—PAINTING.—For painting the various schools. Mr. F. W. Pearce, Surveyor, Town Hall, Twickenham.

JULY 14.—**Various Places.**—PAINTING, &C.—(1) Cleaning and painting stations, &c., Hereford to Glasbury, and Brecon ; (2) Swansea to Brynamman ; (3) Loco. depot and waggon repairing shops at Wigston ; (4) waggon shops, Ashton-road, Manchester ; (5) engine shed, &c., Belle Vue, Manchester ; (6) stations &c., Heeley, Millhouses and Eccleshall, Beauchief Eckington and Renishaw, Killamarsh, Woodhouse Mill, and Treeton ; (7) at and between Carlton and Netherfield, Rolleston Junction, and Blidworth and Rainworth ; (8) goods stations at Dentonholme and Petterill, and engine and waggon shops, &c., at Petterill, Carlisle, for the Midland Rly. Co., Engineers Offices, Derby Station.

JULY 15.—**Kirkwall.**—HOUSES.—Erection of 22 blocks, consisting of 44 4-apartment houses, for the T.C. Mr. W. J. Heddle, Town Clerk, Kirkwall. Deposit £1 1s.

JULY 15.—**Manchester.**—MESSROOM, &C.—Providing of a messroom, w.c.'s, lavatories and locker-room at the C.W.G. Plant, for the Gas Department. Mr. Godfrey W. Kaye, secretary, Gas Department, Town Hall, Manchester.

JULY 16.—**Hursley.**—HOUSES.—Erection of cottages at Chandler's Ford (10 and 32), Otterbourne (30), Baddesley (10), for the R.D.C. Mr. A. Haynes Johnson, 95A, High-street, Winchester.

JULY 16.—**Knebworth.**—ENLARGEMENT.—For the enlargement of the County Council School at Knebworth, for the Herts C.C. Lt.-Col. A. E. Prescott. County Surveyor, County Surveyor's Office, Hatfield.

JULY 16.—**Liskeard.**—HOUSES.—Erection of 2 cottages at No Man's Land, for the R.D.C. Mr. C. W. Parkes Lees, architect, Fowey.

JULY 17.—**Reigate.**—BUILDING WORKS.—(a) Erection of public convenience, and (b) extension of sewerage purifying station, for the T.C. Borough Surveyor, Municipal Buildings, Reigate.

JULY 17.—**Suffolk.**—PAINTING, &C.—Painting and repairs to the following county buildings :—Brandon Police Station, Bury St. Edmund's Police Station, Clare Police Station, Haverhill Police Station, Newmarket Police Station. Mr. A. Ainsworth Hunt, County Architect, 51, Abbeygate-street, Bury St. Edmund's.

JULY 17.—**Wem.**—HOUSES.—Erection of 52 houses on the Shrubbery site, Wem, Salop, for the U.D.C. Mr. Herbert Rutter, Clerk, Town Hall, Wem, Salop. Deposit £2 2s.

JULY 17.—**Wheatley.**—HOUSES.—Erection of four houses for the U.D.C. Mr. J. Wells, architect, Market-street, Oxford.

JULY 17.—**Yorkshire.**—PAINTING.—Painting of the East Garforth Council, Sherburn Council, South Milford Council, Templenewsam, Halton, and Colton Council, and Oulton-with-Woodlesford Council Schools, and tar-spraying at Kippax Council School, for the West Riding C.C. Mr. H. W. Powell, Education Offices, Garforth.

JULY 19.—**Abingdon.**—HOUSES.—Erection of houses at North Hinksey (2), Wootton (6), Radley (4), Sunningwell (4), Draycott Moor (2), for the R.D.C. Mr. H. W. Smith, architect, 57, High-street, Oxford. Deposit 10s. 6d.

*JULY 19.—**Ampthill.**—HOUSES.—Erection of 10 houses for the working classes. Mr. Leonard Foster, Surveyor to the Council.

JULY 19.—**Chertsey.**—COTTAGES.—Fifty cottages, roads, drainage, &c., for the U.D.C. Mr. W. W. Scott Moncrieff, architect, 11, Gray's Inn-place, London, W.C.1 Deposit £2 2s.

JULY 19.—**Darlington.**—OFFICES.—Erection of offices for the District Superintendent at Darlington, for the North Eastern Railway Co. Mr. Arthur Pollard, Company's Architect, York.

JULY 19.—**Droylesden.**—HOUSES.—Erection of 28 houses of various types, for the U.D.C. Mr. Charles Hall, Council Offices, Droylesden.

JULY 19.—**Egremont.**—ALTERATIONS.—Alterations and additions to premises in the main street, for the Egremont Industrial Co-operative Society, Ltd. Mr. H. Oldfield, architect, Workington.

JULY 19.—**Goole.**—PAINTING.—Painting of Girls' Secondary School. Mr. W. T. Silvester, 10, Victoria-street, Goole.

*JULY 19.—**Greenwich.**—HOUSES.—Erection of 167 houses, for the Metropolitan Borough. Mr. Alfred Roberts, architect, 92, London-street, Greenwich. Deposit £2 2s.

JULY 19.—**Hungerford.**—HOUSES.—Erection of 20 houses at Kirtbury, for the R.D.C. Mr. H. W. Smith, architect, 57, High-street, Oxford. Deposit £1 1s.

JULY 19.—**Lambourn.**—HOUSES.—Erection of 36 houses at Lambourn, for the Hungerford R.D.C. Mr. H. W. Smith, architect, 57, High-street, Oxford. Deposit, £1 1s.

JULY 19.—**Otley.**—HOUSES.—Erection of 210 houses, for the U.D.C. Mr. A. G. Adkin, Lic.R.I.E.A., The Chambers Ilkley. Deposit £3.

*JULY 19.—**Runcorn.**—HOUSES.—Erection of 30 houses of various types (together with drains and fencing in connection with same). Messrs. Wright & Hamlyn, architects, Sankey-street Chambers, Warrington. Deposit £2 2s.

JULY 19.—**Salford.**—PUMP ROOM, &C.—Building pump room, suction well, and concrete water duct at the Frederick-road Generating Station. Borough Electrical Engineer, Electricity Works, Frederick-road, Salford.

JULY 19.—**Walthamstow.**—HOUSES.—Erection of 400 houses of various types, for the U.D.C. Mr. George W. Holmes, Engineer to the Council, Town Hall Annexe, Orford-road, Walthamstow, E.17. Deposit £5 5s.

JULY 19.—West Ham.—Alterations and additions to the Central Secondary School, Stratford, E.15., for the County Borough. Mr. H. Jacques, Architect, Education Committee, 2, Fenn-court, Fenchurch-street, E.C.3. Deposit £5.

JULY 19.—**Wigan.**—EXTENSION.—Extension to the car depot, for the T.C. Mr. R. B. Donald, Borough Engineer, King-street West, Wigan. Deposit £2 2s.

JULY 20.—**Rosyth.**—HALL.—Erection of Masonic Hall at Rosyth. Mr. R. Shearer, architect, 6, Annstreet, Edinburgh. Deposit £1 1s.

JULY 20.—**Rothesham.**—SANATORIUM.—Erection of the following works at Oakwood Hall Sanatorium:—Two convalescent blocks, nursing block, the reconstruction of Oakwood Hall for use as an administration block, and the reconstruction of the stables and outbuildings. Mr. T. P. Collinge, Engineer, Town Hall, Rotherham. Deposit £2 2s.

JULY 20.—**Stratton.**—HOUSES.—Erection of 44 houses in parishes for the R.D.C. Mr. M. V. Treleaven, Bude. Deposit £2 2s.

JULY 20.—**West Ham.**—HOUSES.—Erection of 116 houses of various types for the County Borough. Borough Engineer, Town Hall, West Ham, E. 15.

✱JULY 21.—**Featherstone.**—HOUSES.—Erection of 24 houses on the Church Fields site, Purston, for the U.D.C. Mr. Samuel Chesney, architect, Council Offices, Featherstone. Deposit £2 2s.

JULY 21.—**Porth.**—VARIOUS.—(a) Minor repairs, (b) painting boys' school, (c) painting and colouring of girls' school, for the Governors. Mr. Jacob Rees, architect, Pentre.

✱JULY 21.—**Westminster.**—Painting, Distempering, and general repairs and laying of wood block flooring and the erection of sanitary annexe at their Infirmary in the Fulham-road, S.W. Clerk to the Guardians, Guardians Office, Princes-row, Buckingham Palace-road, S.W.1.

JULY 22.—**Castleford.**—RE-SLATING.—Re-slating of roof of Castleford Wheldon-lane Council School. Education Architect, County Hall, Wakefield.

JULY 22.—**London.**—TELEPHONE EXCHANGE.—Erection of Holborn Telephone Exchange, London, W.C. 1. Director of Contracts, H.M. Office of Works, Storey's Gate, S.W. Deposit, £1 1s.

✱JULY 22.—**Westhampnett.**—HOUSES.—Erection of houses, for the R.D.C. Mr. John Dovaston, architect, Pallant House, Chichester. Deposit £1 1s.

✱JULY 22.—**London, W.C. 1.**—TELEPHONE EXCHANGE.—Erection of Telephone Exchange (Holborn). Secretary, His Majesty's Office of Works, Storey's-gate, Westminster, S.W.1. Deposit £1 1s.

JULY 22.—**Scarborough.**—HOUSES.—Erection of cottages as follows:—West Ayton 16, East Ayton 12, Brompton 14, Burniston 6, Sawdon 2, Cayton 16, Cloughton 12, Gristhorpe 6, Hackness 5, Lebberston 4, Seamer 20, Snainton 26, Staintondale 4, for the R.D.C. Mr. F. H. Bromhead, 18 Grove-street, Retford, Notts. Deposit £2 2s.

JULY 22.—**Silsden.**—ADDITIONS.—For new stair, caretaker's store, &c., at Silsden Rothfield-street. Council School, for the West Riding E.C. Education Architect, County Hall, Wakefield.

JULY 23.—**Escrick.**—HOUSES.—Erection of six cottages at Stillingfleet, near York, for the R.D.C. Fred T. Penty, architect, Lendal Chambers, York.

✱JULY 24.—**Basingstoke.**—HOUSES.—Erection of 35 houses, for the Borough, of various types. Messrs. Wallis & Smith, 8, Cross-street, Basingstoke. Deposit £2 2s.

✱JULY 24.—**Chorley.**—HOUSES.—Erection of 64 houses at Charnock Richard for the R.D.C. Mr. J. B. Jolly, Architect, 9, High-street, Chorley. Deposit £5.

JULY 24.—**Little Houghton.**—HOUSES—Erection of 12 houses at Little Houghton, near Barnsley, for the Houghton Main Colliery Co., Ltd. Mr. A. B. Linford architect, Carlton Villa, Wombwell.

JULY 25.—**Chelmsford.**—CONVERSION.—Conversion of stables, &c., at Police Headquarters, into two flats and one cottage, for the Essex C.C. Mr. John Stuart, County Architect, 79, Duke-street, Chelmsford.

JULY 26.—**Birstall.**—HOUSES, STREET, SEWERS AND STREET PLANTING, AND BOWLING GREEN.—Erection of 250 houses, and construction of streets and laying of sewers. Mr. Norman Culley, architect, 13, John William-street, Huddersfield. Deposit £4 4s.

JULY 26.—**Bromley.**—HOUSES, &C.—For the whole of the works in connection with the erection of houses in the parishes of Farnborough, Chelsfield and Knockholt, for the R.D.C. Mr. F. Danby Smith, F.R.I.B.A., Parliament Mansions, Victoria-street, Westminster S.W. 1. Deposit £2 2s.

JULY 26.—**Derbyshire.**—OUT-PATIENTS' DEPARTMENT.—Erection of Out-Patients' Department to the Derbyshire Royal Infirmary. Mr. Walter Banks, Secretary, Royal Infirmary, Derbyshire.

JULY 26.—**Ebbw Vale.**—HUTS.—Erection and conversion of Army huts into dwellings at Beaufort, Briery Hill, Waunlwyd and Cwm, for the U.D.C. Mr. P. I. Davies, Housing Architect, Council Offices, Ebbw Vale, Deposit £2.

JULY 26.—**Llangollen.**—HOUSES.—Erection of 20 houses and construction of roads, &c., for the R.D.C. Messrs. Berrington, Son & Watney, Prudential Chambers, Wolverhampton. Deposit £2 2s.

JULY 26.—**Oswestry.**—HOUSES.—Erection of 20 houses at Weston Rhyn site, and construction of roads, sewers, &c., for the R.D.C. Messrs. Berrington, Son & Watney, Prudential Chambers, Wolverhampton. Deposit £2 2s.

✱JULY 27.—**Brentford.**—Alterations, painting, road, repairs, &c., for the Guardians of the Brentford Union. to their Infirmary at Isleworth, Middlesex. Messrs. Dodge & Reid, architects, 120, High-street, Brentford Deposit £2 2s.

✱JULY 27.—**Poplar, E.**—TENEMENTS.—Erection of 6 tenements in Grundy-street, Poplar, for the Metropolitan Borough. Borough Surveyor, Council Offices, Poplar, E. Deposit £2 2s.

JULY 30.—**Heywood.**—HOUSES.—Erection of 10 houses (in pairs) for the T.C. Mr. J. B. Nuttall, Borough Surveyor, Heywood. Deposit £2 2s.

JULY 31.—**Battle, Sussex.**—COTTAGES.—Erection of 60 cottages for the U.D.C. Messrs. Callow & Callow, architects, 47, Havelock-road, Hastings. Deposit £3 3s.

✱JULY 31.—**Malling, Kent.**—COTTAGES.—Erection of fourteen cottages for the R.D.C. Mr. W. K. McDermott, architect, Council Offices, Malling, Kent.

AUGUST 10.—**Hemsworth.**—HOUSES.—Erection of 556 houses of various types, and six combined houses and shops, South Kirkby, also for the roadmaking and construction of sewers for the R.D.C. Messrs. Garside and Pennington, Ropergate, Pontefract. Deposit £1 1s.

✱NO DATE.—**Maldon.**—HOUSES, WATER MAIN, STONEWARE PIPE SEWERS.—Erection of 24 houses, water mains and sewers for the R.D.C. Mr. W. Almond, surveyor, 6, Market Hill, Maldon.

NO DATE.—**Shelf.**—HOUSES.—Erection of 28 houses and construction of streets and sewers for the U.D.C. Messrs. Walsh and Maddock, Harrison-road, Halifax. Deposit £1 1s.

NO DATE.—**Skirlaugh.**—HOUSES.—Erection of about 150 houses in 28 villages for the R.D.C. Mr. C. W. Hobson, Clerk, 26 and 28, Lairgate, Beverley.

NO DATE.—**Soyland.**—HOUSES.—Erection of 20 houses at Ripponden for the U.D.C. Messrs. Walsh and Maddock, architects, 10, Harrison-road, Halifax.

✱NO DATE.—**Tatsfield, Surrey.**—DWELLINGS.—Erection of six working class dwellings at Tatsfield, Surrey. Mr. Granville Streatfield, 24, Old Buildings, Lincoln's Inn, W.C.2 Deposit £2 2s.

FURNITURE, MATERIALS, etc.

JULY 12.—**Lewisham.**—TRUCKS, TROLLEYS, &C.—The Guardians of the Poor of the Lewisham Union invite tenders for four sacks trucks, three laundry trolleys, five laundry trolleys (small), 24 coal bunkers, six dinner wagons, required at the Hospital, 390, High-street, Lewisham. The Steward of the Hospital.

JULY 13.—**Islington.**—PAVING BLOCKS.—Supply of creosoted deal paving blocks to the B.C. Borough Engineer, Town Hall, Islington, N.

JULY 14.—**Alvaston.**—SLAG.—For 500 tons of ¼ in. to 2½ in. tarred slag, for the U.D.C. Mr. J. Gretton, Clerk, Full-street, Derby.

JULY 14.—**Salford.**—KERB.—Supply of kerbing to the T.C. Borough Engineer. Town Hall, Salford.

JULY 19.—**Faversham.**—ROAD MATERIALS.—Supply of road materials to the T.C. Mr. S. P. Andrews, Borough Engineer, Faversham.

ENGINEERING, IRON AND STEEL.

JULY 10.—**Holbeach.**—HEATING.—For heating of Holbeach Parish Church on the low pressure system. Rev. Canon Hutchinson, the Vicarage, Holbeach.

JULY 13.—**Lewisham.**—FENCING.—Supply of 1,390 yards of wrought-iron fencing to the B.C. Borough Surveyor, Town Hall, Catford, S.E.

JULY 13.—**Lisburn.**—VARIOUS WORK.—For heating installation, electric light installation, &c., at the Workhouse, for the Board of Guardians. Union Offices, Lisburn.

JULY 13.—**London.**—BRIDGEWORK.—Supply of bridgework (100 ft. and 80 ft. spans) for the Secretary of State for India. The Director-General of Stores India Office, Whitehall, S.W.1.

JULY 13.—**Manchester.**—MATERIALS.—Supply of tramway rail bands (collar) for the Tramways Dept. Mr. J. M. McElroy, general manager, 55, Piccadilly, Manchester.

JULY 13.—**Wood Green.**—ELECTRIC LIGHTING.—Electric lighting installation at (1) the Town Hall; (2) Bounds Green-road Schools, for the U.D.C. Mr. Wm. P. Harding, Clerk, Town Hall, Wood Green. Deposit £1 1s.

JULY 15.—**Manchester.**—GAS PLANT.—Construction of Exhauster house, washer, scrubber, and tar extractor house, meter house, weighbridge house, condenser, and sundry plant foundations, &c., for Gas Dept. Mr. Godfrey W. Kaye, Secretary, Gas Department, Town Hall, Manchester. Deposit £2 2s.

JULY 16.—**Ebbw Vale.**—PIPES.—Supply of about 460 tons of cast iron pipes (principally 9 in.), for the U.D.C. Sir Alex. Binnie, Son & Deacon, 30, Buckingham Gate, Westminster, S.W. 1. Deposit £2 2s.

JULY 16.—**Ebbw Vale.**—SLUICE VALVES.—Supply of six sluice valves of 9 in. and smaller sizes, together with air valves and surface boxes, for the U.D.C. Sir Alex. Binnie, Son & Deacon, 30, Buckingham Gate, Westminster, S.W. 1. Deposit £2 2s.

JULY 16.—**London.**—RAILWAY MATERIAL.—Supply of (a) rails and fishplates, (b) dogspikes, (c) fishbolts. for the Secretary of State for India. Director-General of Stores, India Office, Whitehall, S.W.

AUGUST 26.—**West Wickham.**—PUMPING MACHINERY.—Supply to the Metropolitan Water Board of one triple expansion pumping engine at West Wickham Well, Kent. Mr. Henry E. Stilgoe, Chief Engineer, 178, Rosebery-avenue, E.C.1. Deposit £5.

SEPTEMBER 30.—**Australia.**—PIER.—Construction of ocean pier for the Manly Municipality, New South Wales. Messrs. Gordon & Gotch, 15, St. Bride-street, E.C.

ROAD, SANITARY, AND WATER WORKS.

JULY 10.—**Bingley.**—ASPHALTING.—Repairs to playgrounds, Shelf Council School. Mr. B. Leah, Education Office, Bingley.

JULY 10.—**Lincolnshire.**—DRAINAGE.—Excavating and removing sand and cleansing Harlem Hill sandpool and part of the east drain in several districts. Mr. H. M. Hett, Clerk, Brigg.

JULY 10.—**Methley.**—ROADS, &C.—Laying of sewers, making-up of streets, &c., for the U.D.C. Mr. Thos. Thompson, surveyor, Red House, Methley. Deposit £1 1s.

JULY 12.—**Blean.**—SEWERS.—Construction of two lengths of stoneware pipe sewers at Eddington and Reculver, for the R.D.C. Mr. F. A. Ward, Surveyor, Blean Union, Herne. Deposit £2.

JULY 12.—**Ipswich.**—PAVING.—For tar paving the boys' playground at St. John's Home, Freehold-road, Ipswich, for the Board of Guardians. Offices, 19, Tower-street, Ipswich.

JULY 14.—**Bingham.**—LAY-OUT.—Lay-outs in connection with the housing schemes at Cotgrave and Keyworth, for the R.D.C. Messrs. Sands & Walker, Milton Chambers, Nottingham. Deposit £1 1s.

JULY 14.—**Glamorganshire.**—ROADS.—(1) Bridgend and Porthcawl Main-road: diverson and widening between Redhill and Tythegston; (2) Llanharan and Brynna Main-road: widening and diverson at Brynna, for the Glamorgan C.C. Mr. T. M. Franklen, Clerk, Glamorgan County Hall, Cardiff.

JULY 14.—**Wood Green.**—ROADS, ETC.—Street construction and sewerage on White Hart-lane site for the U.D.C. Mr. Wm. P. Harding, Clerk, Town Hall, Wood Green. Deposit £2 2s.

JULY 15.—**Hemel Hempsted.**—SEWERS.—Construction of about 3 miles of stoneware sewers, &c., for the T.C. Borough Engineer, Hemel Hempsted. Deposit £2 2s.

JULY 15.—**Rawtenstall.**—SEWERS.—The sewering and paving of Back Worswick-crescent, for the T.C. Borough Surveyor, Town Hall, Rawtenstall. Deposit £1.

JULY 16.—**Ebbw Vale.**—WATER MAINS.—Laying of cast-iron pipes (principally 9 in.) and ancillary works in the Parish of Ebbw Vale for a distance of about three miles, for the U.D.C. Sir Alex. Binnie, Son & Deacon, 30, Buckingham Gate, Westminster, S.W. 1. Deposit £2 2s.

JULY 17.—**Wem.**—ROADS, &C.—Streets and sewerage work in connection with housing scheme, for the U.D.C. Mr. Herbert Rutter, Clerk, Town Hall, Wem, Salop. Deposit £1 1s.

JULY 19.—**Rhondda.**—SANITARY.—Scavenging of district for the U.D.C. Mr. E. H. Barber, Surveyor, Council Offices, Pentre, Rhondda.

JULY 20.—**Caerphilly.**—ROADS.—Widening and improving of the Aber-road, from Penyrheol to Abertridwr, for the U.D.C. Mr. T. H. Richards, Surveyor, Council Offices, Caerphilly. Deposit £2 2s.

JULY 20.—**Hazel Grove and Bramhall.**—ROADS, ETC.—Construction of roads and sewers in connection with the Council's Housing Scheme at Bosden Fold road. Mr. G. Severn Doncaster, Surveyor, Council Offices, Hazel Grove.

JULY 21.—**Bloemfontein.**—WATERWORKS.—Sluicegate, gearing, suspension bridge, &c., shutters, &c., in connection with the reconstruction of Mazels Poort and Mockes Dam Weir on the Modder River, for the Corporation of Bloemfontein (O.F.S.), South Africa, Waterworks Department. Messrs. Davis & Soper, Agents of the Corporation of Bloemfontein, 54, St. Mary Axe, London, E.C. 3.

JULY 21.—**Seaham Harbour.**—ROADS, &C.—Construction of roads and sewers in connection with housing scheme for the U.D.C. Council's Surveyor (Mr. T. A. Lawton), Council Offices, Seaham Harbour. Deposit £2 2s.

JULY 27.—**Gosforth.**—CONVENIENCE.—Erection of a Public Urinal on the north side of Salters-road for the U.D.C. Mr. Geo. Nelson, Engineer, Council Offices, Gosforth.

JULY 30.—**Heywood.**—ROADS, ETC.—Construction of streets and sewers in connection with housing scheme for the T.C. Mr. J. B. Nuttall, Borough Surveyor, Municipal Buildings, Heywood. Deposit £2 2s.

NO DATE.—**Barkston Ash.**—DRAINAGE.—Cleansing of the drains west of, and draining into the Bishop Dyke, in the parishes of Barkston, etc. Surveyor to the Commissioners, Mr. F. Graham Fairbank, Lendal Chambers, York.

Auction Sales, Tenders, &c.

JULY 12.—**Brondesbury.**—Messrs. J. T. Skelding & Co., will sell at Messrs. H. Sabey & Co., in order to clear yards, 25, Inverson-road (close to Kilburn Station), second portion of the extensive secondhand stock of timber and building material. Auctioneers, 48, Gresham-street, Guildhall, E.C.2.

JULY 13.—**Cleeve, Somerset.**—Messrs. Joseph Hibbard & Sons will sell by order of the Board of Trade upon the Mill site, four miles from Yatton Station. Stock of English timber. Auctioneers, Newington-green, Islington, N. 16.

JULY 13 AND 14.—**Dover.**—Messrs. Worsfold and Hayward will sell stock-in-trade of general builder and undertaker. Auctioneers, Market-square, Dover.

JULY 15.—**Buckinghamshire.**—Messrs. Knight, Frank & Rutley will sell, by direction of His Grace the Duke of Bedford, K.G., in thirteen lots, in the parishes of Chalfont St. Giles, Chenies and Amersham, freehold property, forming part of the Loudhams Farm and Lodge Farm. Auctioneers, 20, Hanover-square, London, W. 1.

✱JULY 15.—**Kennington.**—Messrs. Douglas Young & Co. will sell at 15, Ethelred-street, Kennington, builders' and contractors' plant, machinery, and material. Auctioneers, 5, Coleman-street, E.C.2.

JULY 17.—**Seaford, Sussex.**—Sale by tender by order of the Disposal Board. Steel-framed, galvanised iron buildings erected at Seaford Goods Station, Sussex. Controller, Disposal Board, Huts and Building Material Section, 35, Cromwell-road, Kensington, S.W. 5.

✱JULY 19.—**Hendon.**—Messrs. Joseph Hibbard & Sons will sell by order of Messrs. Graham White Co. Ltd., at the Hendon Aerodrome, surplus plant, stock and machinery of a large variety. Auctioneers, Newington Green, Islington, N.16.

✱JULY 20.—**Westminster, S.W.1.**—Mr. Frank G. Bowen will sell, by order of the Receiver for the debenture holder, furniture manufacturers' and aeronautical and Morse engineers' plant, machinery and stock. Auctioneers, 62A, Aldersgate-street, E.C.1.

✱JULY 21.—Messrs. Montague Blaber will sell by direction of the Disposal Board sectional and non-sectional huts and buildings at the Government depot. Richborough (near Sandwich, Kent). Auctioneers, Hailsham, Sussex.

✱JULY 21 AND 22.—**Warminster.**—Messrs. Herring, Son & Daw will sell at Sutton Veny, Warminster, Wilts, at Camp 7, 8, 9, 10 and R. E. Cyclists' Camp, huts and buildings, sectional huts and buildings, officers' quarters, &c. Auctioneers, 98, Cheapside, London, E.C. 2.

✱JULY 30.—**London, E.C.**—Messrs. S. Walker & Co. will sell by order of the Liquidator, under the trading with the enemy act. Three well-built modern factory premises (one with early possession), Nos. 14, 16, and 18, Nile-street, and 7, Shepherdess-place, City-road. Auctioneers, 22, Moorgate-street, E.C.2.

✱NO DATE.—Messrs. Frank Lloyd & Sons will sell by direction of the Disposal Board, 1,000 seasoned and unused interior and exterior panelled doors on the premises of Messrs. Doland & Sons (by kind permission) Napier-road, Warrington. Auctioneers, St. Oswald's Chambers, St. Werbergh-street, Chester.

Competitions.

(See Competition News, page 34.)

Public Appointments.

JULY 10.—**Hove.**—Building Inspector required by the Borough. Salary £300 per annum. The Building Inspector, Municipal Offices, Hove.

JULY 10.—**Newport.**—Architectural Assistant for the County Borough. Salary £250 per annum, rising to £285. Borough Architect, Town Hall, Newport, Monmouth.

JULY 12—**Greenwich.**—Male Commercial Clerk in Works Dept. for the Metro. Borough. Salary, with Bonus, £233 per annum. Town Clerk, Town Hall, Greenwich, S.E.10.

JULY 12.—**Leek.**—Clerk of Works for the U.D.C. Salary £25 per calendar month. Mr. W. E. Beacham, Council's Architect, Town Hall, Leek.

✱JULY 13.—**Tonbridge.**—General foreman and costings clerk for the U.D.C. Mr. W. L. Bradley, Director of Housing, The Castle, Tonbridge.

JULY 14.—**Eastleigh and Bishopstoke.**—MANAGER, &C.—Manager, costing clerk, foreman, for the U.D.C. The Engineer and Surveyor, Council Offices, Eastleigh, Hants.

✱JULY 17.—**Shepherds Bush, W.11.**—Manager of a new Government industrial factory for the Carpentry and Joinery (Building) Trades, Hadyn Park; temporary appointment. Salary £450 per annum. Divisional Director of Industrial Training for London (M.L.4), Montagu House, Whitehall, S.W.1.

✱JULY 19.—**Goole.**—Surveyor's assistant required by the U.D.C. Mr. J. H. Castle, Surveyor, Council Offices, Goole.

SEPTEMBER 29. — **Warwick.** — County Architect required by the County. Salary £800 a year. Office, staff, motor cycle and sidecar supplied, and reasonable travelling expenses. Clerk to the Council, Leamington.

✱NO DATE.—**London.**—Draughtsman required by the L.C.C. Architect to the Council, New County Hall, S.E.1.

TRADE NEWS.

Gas-filled Lamps.

The successful production (announced a few days ago) of a 40-watt, 100–130-volt, and a 60-watt, 200–260-volt Mazda lamp should have a very great influence on the artificial lighting of private houses, since many people who have not hitherto been able to take full advantage of the high efficiency of gas-filled lamps owing to the comparatively large sizes in which they were manufactured, can now use them in place of vacuum lamps in any ordinary room. Both lamps have ring filaments and can be operated in any position. They are normally fitted with standard bayonet caps. The approximate overall dimensions of the 40-watt, 100-volt lamp are: Diameter 2⅜ in., and length 4¾ in.; and of the 60-watt, 200-volt lamp, diameter 2¾ in. and length 5¾ in. Further information may be obtained from the British Thomson-Houston Co., Ltd., 77, Upper Thames-street, E.C. 4.

Messrs. Palladium Autocars, Ltd., Commercial vehicle manufacturers, of Felsham-road, Putney, S.W. 15, have received a repeat order from Messrs. Trollope & Colls, Ltd., building contractors, of London, for a further four of their 4-ton vehicles. This firm on delivery will then have a fleet of eight 4-ton vehicles. Messrs. Palladium Autocars, Ltd., have also received a further order from Messrs. the Great Grimsby Street Tramways Co., for a fleet of eight of their 4-ton chassis for omnibus and char-a-banc passenger services in and about Grimsby.

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C. 2, from the documents available at the Companies' Registry.

W. L. BERRY & SONS, LLD. (168,063). Registered June 5. Joiners and builders. Nominal capital, £3,000.

BIDDULPH MINING AND POTTERY CO., LTD. (168,429). Registered June 21, Manufacturers of bricks, tiles, pipes and pottery. Nominal capital, £12,000.

BORDER ENGINEERING CONTRACTORS, LTD. (168,603). Registered June 26. 62, Church-road, Harrington, Cumberland. Ferro-concrete and structural engineers. Nominal capital, £3,000.

DAVIS (BUILDERS), LTD. (168,406.) Registered June 19. 7, Higher York-street, All Saints, Manchester. House and property agents, joiners and builders. Nominal capital, £3,000.

DUDLEY LEWIS INTER-CAVITY CONSTRUCTION CO., LTD. (168,501). Registered June 23. Builders and contractors. Nominal capital, £3,000.

DAWKINS, HARRIS & WEAVER, LTD. (168,320). Registered June 16. 10, Beaufort-square, Chepstow, Mon. Builders and contractors. Nominal capital, £8,000.

GARDEN CITY CONSTRUCTION CO., LTD. (168,504). Registered June 23. 88–90, Chancery-lane, E.C. 2. Builders and contractors, &c. Nominal capital, £100.

J. E. HARPER & SON, LTD. (168,591). Registered June 25. 76, Lombard-street, Birmingham. Builders and contractors. Nominal capital, £6,000.

HEMEL HEMPSTEAD PATENT BRICK CO., LTD. (168,538.) Registered June 24. Claydales, Redbourne-road, Hemel Hempstead. Nominal capital, £22,000.

ILFORD PATENT STONE CONSTRUCTION AND SUPPLY CO., LTD. (168,291). Registered June 15. 75, Bedford-road, Ilford, Essex. Nominal capital, £10,000.

LLOYD, TOOVEY & LEPLEY, LTD. (167,907). Registered June 1. The Hut, Shoelands Farm, Hendon, N.W. Builders, builders' merchants, &c. Nominal capital, £500.

JOHN MALLIN & CO., LTD. (167,806.) Registered May 28. Modellers, fibrous plaster workers, &c. Nominal capital, £2,000.

OAK HILL BRICK AND TILE CO., LTD. (168,135). Registered June 9. Nominal capital, £16,000.

PENARTH BRICK WORKS CO., LTD. (167,740). Registered May 26. 15, Woodland-place, Penarth, Glam. Nominal capital, £10,000.

J. SANDERS & SONS, LTD. (168,293). Registered June 15. 92 & 93, Crawford-street, Bryanston-square, W. 1. Builders, decorators and contractors. Nominal capital, £20,000.

SCARBOROUGH UNITED BRICKWORKS, LTD. (167,921). Registered June 1. Huntress Chambers, Huntress-row, Scarborough. Nominal capital, £20,000.

SLOUGH AND LANGLEY BRICK CO., LTD. (168,552). Registered June 24. Brick and tile makers. Nominal capital, £100,000.

F. S. SUGDEN & CO., LTD. (167,485). Registered May 13. 10, East-parade, Leeds. Gasworks and building contractors. Nominal capital, £20,000.

WOODCOURT, LTD. (167,427). Registered May 13. 30, Brazennose-street, Manchester. Builders, architects and surveyors. Nominal capital £15,000.

Wages at Hereford.

The Hereford branch of the National Federation of Building Trade Operatives, has sent a demand to the Secretary of the local Building Employers' Association, for an increase of from 1s. 10½d. to 2s. 6d. per hour for tradesmen, and from 1s. 7½d. to 2s. 3d. per hour for labourers. The demand has been refused, the employers holding that they and the men are bound by the area settlement arrived at a few months ago

PATENTS.

APPLICATIONS PUBLISHED.*

141,954.—J. K. McDonald: Riddle.

141,959.—J. D. Fry and E. A. Hughes: Rotary wedge for the prevention of rattling of windows.

141,962.—A. T. Matchett: Cabinet handles.

141,973.—W. Dargue: Pulley blocks.

141,979.—J. T. Pickering and S. E. Barron: Hoisting appliances.

141,999.—Mann, Egerton & Co., and H. H. Hawes: Hinge.

142,174.—C. Van der Leun: Lock.

142,179.—N. Pemberton-Billing: Domestic heating and cooking apparatus.

123,069.—L. N. Bourdoncle: Syphonic basins.

142,216.—A. Wiggins and W. H. Rawlings: Hinged sliding windows.

142,227.—C. Pegram: Metal skeletons of buildings, which are applicable for reinforcing concrete buildings.

142,231.—A. J. May: Chimney cowls and ventilators.

142,236.—Z. Watkins: Guttering and the erection thereof as used in connection with buildings.

142,237.—A. Sharratt: Brick kilns.

142,258.—J. D. Roots: Domestic fire-grates.

142,273.—A. O. E. Caillault: Wicket doors.

142,281.—J. A. Armstrong: Stoves and chimneys of mutiple-storied buildings.

142,285.—P. H. Allnatt: Building blocks.

142,290.—W. A. Elliot: Woodworking machines.

142,302.—P. G. Barnsley and J. Barnsley & Sons: Lifting tackle.

142,321.—W. H. Cross: Sash-windows.

142,328.—F. Bolton: Reinforced concrete floors, roofs, landings and beams.

142,334.—Roneo, Ltd., and W. Chipperfield: Mounting handles and labels, on metal furniture.

142,346.—A. N. Clough: Convertible furniture.

142,366.—H. Murchie: Sliding sash windows.

130,981.—C. Roy: Process and apparatus for rendering wood impermeable, and recovering liquids contained therein.

142,380.—W. B. Templeton and J. Malicki: Lifting appliances.

142,406.—J. Aylott: Windows.

142,526.—S. P. Henman: Concrete floors and roofs.

142,540.—J. Wipf: Folding or extension tables.

142,562.—F. F. Wilkins and B. E. Johnson: Locks or bolts for doors.

142,585.—W. J. Panton, J. F. Ward and J. T. Willis: Castors.

142,587.—R. B. Ransford (Soc. d'Etude Technique et d'Entreprise Mixedstone): Walls or other structures.

142,589.—F. W. E. Shrivell: Shelves.

142,592.—H. G. Whitton: Scaffolding and cradles.

142,594.—H. A. Hamilton: Concrete block walls.

142,607.—G. Wheeler: Window frames.

142,636.—T. W. Cotton Proprietary and T. W. Cotton: Means for ventilating buildings.

142,679.—J. W. Cleminson: Window sashes.

142,697.—J. Ryan: Moulding and trimming or finishing apparatus used in conjunction with each other in a method of manufacturing building blocks or slabs.

142,756.—J. Murray: Terminals for flues and ventilating and other ducts in buildings.

142,876.—F. W. Melde: Roofing tiles.

142,883.—W. H. Le Breton: Buildings or other structures partly formed of slats connected by flexible members.

142,887.—A. J. Roach-Cuming: Slabs and hollow vessels for building construction and insulation purposes.

142,895.—A. P. Thurston: Structural members made from metal strip or sheet.

142,904.—C. Bohachik: Door-locks.

142,939.—F. W. Beech and W. J. Otton: Fire-grates.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

	£ s. d.
Per 1,000 Alongside, in River Thames up to London Bridge.	
Best Stocks	4 16 0
Per 1000, Delivered at London Goods Stations.	
	£ s. d.
Flettons	3 5 0
Best Stourbridge Fire bricks	11 15 0
GLAZED BRICKS—	
Best White, Ivory, and Salt Glazed Stretchers	27 10 0
Headers	27 0 0
Quoins, Bullnose and 4½in. Flats	33 0 0
Best Blue Pressed Staffordshire	10 6 0
Do. Bullnose	10 8 6
Blue Wire Cuts	8 8 6
D'ble Str'tch'rs	35 0 0
D'ble Headers	32 0 0
One Side and two Ends	36 0 0
Two Sides and one End	34 10 0
Splays and Squints	34 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.	
Thames Ballast	20 6	per yard, delivered
Pit Sand	24 6	
Thames Sand	26 6	2 miles radius
Best Washed Sand	25 6	Paddington.
½in. Shingle for Ferro-Concrete	24 6	
¼ in.	25 6	

Per ton, delivered in London area.

	£ s. d.	£ s. d.
Best Portland Cement	4 4 6 ..	4 10 0

77/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	5 0
Best Ground Blue Lias Lime 2 19 6 at rly. depot.	

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 70s. 0d. per ton delivered.
Stourbridge Fireclay in sacks 4s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 4
Do. do. delivered on road waggons at Nine Elms Depot	2 5
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	4 3
Do. do. delivered on road waggons at above stations, per ft. cube	4 4
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 30 ft. *average*, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	16 4
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	11 4½
6 in. rubbed two sides, ditto ..... "	12 9½
8 in. sawn two sides slabs (random sizes) "	5 1
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	3 0
1½ in. to 2 in. ditto, ditto ..... "	2 7
HARD YORK—	
Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	12 3
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	9 9
6 in. rubbed two sides ditto ..... "	11 7
4 in. sawn two sides slabs (random sizes) "	4 7
3 in. ditto, ditto "	5 11½
2 in. self-faced random flags .. Per Yard Super	14 8

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	60 0	per standard
4 × 9	58 0	"
4 × 8	46 5	"
4 × 7	46 0	"
3 × 8	46 0	"
3 × 7	46 0	"
2½ × 7	45 0	"
3 × 6	45 0	"
3 × 11	60 0	"
2½ × 11	60 0	"
3 × 9	60 0	"
3 × 9	60 0	"
3 × 4½	45 0	"
3 × 4	45 0	"

PLANED BOARDS.

1 × 11	65 0	
1 × 9	60 0	"

PLAIN EDGE FLOORING.

Inches		
⅝	34/-	square
¾	42/6	"
1	47/6	"
1¼	60/-	"
1½	70/-	"

TONGUED AND GROOVED FLOORING.

Inches		
1	47/6	square
1¼	60/-	"
1½	70/-	"

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
⅝	34/-	square
¾	40/-	"
1	54/-	"

BATTENS.

Inches	£ s.	
¾ × 2	39 10	per standard

SAWN LATHS.

Per bundle					0	6 0
Dry Wainscot Oak, per ft. super, as inch	0	3	6	to	0	4 0
½ in. do. do.	0	3	0	..		—
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6	to	0	3 0
Cuba. Mahogany	0	4	0	to	0	4 6
Teak (Rangoon, Moulmein or Java), per load	75	0	0	to	85	0 0
American Whitewood planks, per ft. cube	0	18	0	to	1	4 0
Scotch Glue, per cwt.	5	5	0	..		—
Liquid Glue, per gallon	0	17	0	..		—

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	55 0 0
" " "	22 by 12	44 7 6
First quality "	22 by 11	40 15 0
" "	20 by 12	40 7 6
Best Blue Portmadoc	20 by 10	35 0 0
" "	18 by 10	27 17 6
First quality "	18 by 9	22 15 0
" "	16 by 10	21 10 0
" "	16 by 8	16 17 6

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 15 0
Ditto hand-made ditto	7 0 0
Ornamental ditto	7 2 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	38 0 0
Plain Compound Girders	42 0 0
" Stancheons	44 0 0
In Roof Work	48 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Sizes up to and including ⅜ in. Tubes.	Sizes up to and including 2in. Tubes.	Sizes 2½ in. to 6 in. Fittings.	Sizes 2½ in. to 6 in. Tubes.	Sizes 2½ in. to 6 in. Fittings.
Gas	+ 7½	+ 5	— 5	— 2½	— 17½
Water	+17½	+15	Net	+ 6½	— 15
Steam	+28½	+26½	+ 5	+ 16½	— 12½
Gal. Gas	+32½	+30	+ 5	+ 22½	— 7½
" Water	+45	+42½	+ 10	+ 33½	— 5
" Steam	+57½	+55	+ 15	+ 45	— 2½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts.	6 1	4 5	5 4
2½ in. "	7 4	4 11	6 8
3 in. "	8 11	5 4	8 0
3½ in. "	9 11	6 8	9 4
4 in. "	10 6	7 7	10 8

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	4 5	2 6	3 4
2½ in. " "	5 0	3 0	4 1
3 in. " "	6 1	3 7	5 4
3½ in. " "	7 2	4 3	6 3
4 in. " "	7 6	5 2	7 7

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 12s. 5 in., 15s. 6 in., 18s.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	34 0 0	to	35 0 0
Staffordshire Crown Bars good merchant quality	35 0 0	..	37 0 0
Staffordshire "Marked Bars"	36 0 0	..	38 0 0
Mild Steel Bars	36 0 0	..	38 0 0
Steel Bars. Ferro-Concrete quality, basis price	36 0 0	..	38 0 0
Hoop Iron, basis price	44 0 0	..	46 0 0
" " Galvanised	62 0 0	..	66 0 0
Sheet Iron Black—			
Ordinary sizes to 20 g.	50 0 0	..	52 0 0
" " 24 g.	51 0 0	..	53 0 0
" " 26 g.	53 0 0	..	55 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	58 0 0	..	60 0 0
Ordinary sizes to 22 g. and 24 g.	59 0 0	..	61 0 0
Ordinary sizes to 26 g.	61 0 0	..	62 0 0
Ordinary sizes to 20 g.	58 0 0	..	60 0 0
" " 22 g. and 24 g.	59 0 0	..	61 0 0
Ordinary sizes to 26 g.	61 0 0	..	62 0 0

METALS (*Continued*).

	Per ton in London £ s. d.		£ s. d.
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	60 0 0	..	62 0 0
Ordinary sizes, 22 g. and 24 g.	61 0 0	..	63 0 0
Ordinary sizes, 26 g.	62 0 0	..	65 0 0
Sheet Iron, Galvanised, flat, best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	60 0 0	—	62 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	61 0 0	..	63 0 0
Best Soft Steel Sheets, 26 g.	63 0 0	..	64 0 0
Cut Nails, 3 in. to 6 in.	47 0 0	..	47 10 0

(Under 3 in. usual trade extras.)

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	49 0 0	..	—
Pipe in coils	49 10 0	..	—
Soil Pipe	52 0 0	..	—
Compo pipe	53 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	29	0	0	.. —
Do., ex country, carriage forward ..... per ton	30	0	0	.. —

COPPER—				
Strong Sheet ..... per lb.	0	2	3	.. —
Thin " ..... "	0	2	4	.. —
Copper nails ..... "	0	2	3	.. —
Copper wire ..... "	0	2	4	.. —
TIN—English Ingots "	0	2	9	.. —
SOLDER—Plumbers' "	0	1	6	.. —
Tinmen's "	0	2	0	.. —
Blowpipe "	0	2	7	.. —

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES

Per Ft.		Per Ft.	
15 oz. fourths	8d.	32 oz. fourths	11d.
" thirds	8½d.	" thirds	1/-
21 " fourths	9d.	Fluted, Obscured and	
" thirds	9½d.	Enamelled Sheet.	
26 " fourths	10d.	15 oz.	10d.
" thirds	11d.	21 "	1/-

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES. Per Ft.

⅛ Rolled plate	6½d.
⅛ Rough rolled and rough cast plate	7½d.
¼ Rough rolled and rough cast plate	8½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic Arctic, Stippolyte, and small and large Flemish white	7½d
Ditto, tinted	9½d.
Rolled Sheet	7d
White Rolled Cathedral	7d.
Tinted do.	9d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes ..... per gallon		0 7 11
" " " in barrels ..... "		0 8 2
" " " in drums ..... "		0 8 4
Boiled " " in barrels ..... "		0 8 8
" " " in drums ..... "		0 8 10
Turpentine in barrels ..... "		0 12 5
" in drums (10 gall.) .. "		0 12 11
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		83 0 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots ..... per ton delivered		108 15 0
Red Lead, Dry (packages extra) .. per ton		80 0 0
Best Linseed Oil Putty ..... per cwt.		1 12 0
Filocol ..... per cwt.		1 0 6
Size. X D Quality ..... fkn.		0 5 9

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish ..... Outside	0 18 0
Fine ditto ..... ditto	1 0 0
Fine Copal ..... ditto	1 1 0
Pale Copal ..... ditto	1 2 6
Pale Copal Carriage ..... ditto	1 4 6
Best ditto ..... ditto	1 14 6
Floor Varnish ..... Inside	0 19 0
Fine Pale Paper ..... ditto	0 18 0
Fine Copal Cabinet ..... ditto	1 2 6
Fine Copal flatting ..... ditto	1 0 6
Hard drying Oak ..... ditto	0 18 0
Fine Hard drying Oak ..... ditto	0 19 0
Fine Copal Varnish ..... ditto	1 0 6
Pale ditto ..... ditto	1 2 6
Best ditto ..... ditto	1 14 6
Best Japan Gold Size	0 16 6
Best Black Japan	1 0 9
Oak and Mahogany Stain (water)	0 17 6
Brunswick Black	0 11 9
Berlin Black	0 19 9
Knotting (patent)	1 18 6
French and Brush Polish	1 14 0
Liquid Dryers in Terebine	0 16 0
Cuirass Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	24	0
Add if in clay	" "	2	0
Add for every additional depth of 6 ft.	" "	1	6
Planking and strutting to trenches	per foot super	0	7½
Do. to sides of excavation, including shoring	" "	1	6

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	54	0
Add if in underpinning in short lengths	" "	10	0
Add if in floors 6 in. thick	" "	4	0
Add if in beams	" "	5	0
Add if aggregate 1 : 2 : 4	" "	15	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	6

BRICKLAYER.

		£	s	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	48	10	0
Add if in stocks	"	12	10	0
Add if in Staffordshire blues	"	34	10	0
Add if in Portland cement and sand	"	4	15	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1¼

POINTING.

Neat flat strucks or weathered joint	"	0	0	3½

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	1	0
Axed in stocks	" "	0	2	0
Rubbed and gauged jointed in putty camber or segmental	" "	0	7	0

SUNDRIES.

Damp course in double course of slates breaking joint and beaded in Portland cement	" "	0	1	8
Setting ordinary register grates and stoves	each	1	5	0
Setting kitchener, including fuming flues, &c., with all necessary fire bricks	"	6	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	9	0
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

York stone templates fixed	per foot cube	22	0
York stone sills fixed	" "	35	0
Bath stone and all labour fixed	" "	16	0
Portland stone fixed	" "	25	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	75	0	
Do. 20 in. × 10 in. Do. Do.	"	93	0	
Do. 24 in. × 12 in. Do. Do.	"	95	0	

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	9	6	
Do. joists	" "	10	6	
Do. roofs, floors and partitions	" "	11	9	
Do. trusses	" "	14	0	

		¾"	1"	1¼"	1½"
Deal rough close boarding	per sq.	60/-	81/-	100/-	108/-
Flat centering for concrete floor, including struts or hangers	"				68 0
Do. to beams	per ft. sup.				1 10
Centres for arches	"				2 4
Gutter boards and beams	"				1 9

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		82/-	104/-	120/-
Do. tongued and grooved	"		88/-	110/-	127/-
Do. matchings	"	74/-	89/-		
Moulded skirting, including backings and grounds	per ft. sup.	2/4	2/8	3/2	3/8

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	2	0
Two Do. Do. Do.	" "	2	6
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size	" "	5	6

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/8	2/11	3/1
Four-panel Do.	"	3/-	3/4	3/7
Two-panel moulded both sides	"	3/4	3/7	3/10
Four-panel Do. Do.	"	3/8	3/11	4/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	22	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/3	2/5	2/9
Deal shelves and bearers	"	2/-	2/2	2/3
Add if cross tongued	"	2/-	2/-	2/-

STAIRCASES.

		1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough bracelets		3/4	4/-	4/8	—	—
Deal strings wrot in both sides and framed	"	4/6	4/9	—	—	—

		s.	d.
Housings for steps and risers	each	1	0
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail ; average 3 in. × 3 in.	" "	6	3
Add if ramped	" "	12	6
Add if wreathed	" "	25	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	9d.	Rim locks	2/6
Sash fasteners	1/-	Mortice locks	5/6
Casement fasteners	1/6	Patent spring hinges and letting in to floor and making good	20/-
Casement stays	1/3		
Cupboard locks	1/6		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	43	0
Plain compound girders	"	47	0
Do. stanchions	"	49	0
In roof work	"	53	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	2/-	2/6	3/9	4/3
Ogee Do. Do.	"	2/6	3/3	4/-	5/-
Rain-water pipes with ears	"	2/11	3/9		
Extra for shoes and bends	each	4/7	6/3		
Do. stopped ends	"	2/-	2/6	3/9	4/3
Do. nozzles for inlets	"	2/3	2/9	4/-	4/6

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	80	0
Do. Do. in flats	"	75	0
Extra labour and solder in coated cesspools	each	8	0
Welt joint	per ft. run.	0	6
Soldered seam	" "	2	3
Copper nailing	" "	0	8

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/11	2/3	4/-	5/-	
Do. service	"	1/10	2/5	3/-	4/9		
Do. soil	"						
Bends in lead pipe	each						8/-
Solderer's stop ends	"	1/6	2/-	2/6	3/6	4/-	10/-
Red lead joints	"	1/1	1/4	1/7	2/4	4/3	
Wiped soldered joints	"	3/6	4/3	5/-	6/-	3/-	6/-
Lead traps and cleaning screws	"					8/-	12/-
Bib cocks and joints	"	7/6	11/3	18/-	18/-	24/-	
Stop cocks and joints	"	18/-	20/-	30/-	48/-		
					75/-		

PLASTERER.

			s.	d.
Render, float and set in lime and hair	per yard sup.		3	4
Do. Do. siripite	" "		3	9
Do. Do. Keen's	" "		5	0
Add sawn lathing	" "		2	0
Add metal lathing	" "		3	0
Portland cement screed	" "		3	0
Do. plain face	" "		4	6
Mouldings in plaster	per 1 girth		0	3
One-and-a-half granolithic pavings	per yard sup.		6	9

GLAZIER.

21 oz. sheet plain	per foot sup.	1	10
26 oz. Do.	" "	2	0
Obscured sheet	" "	2	3
⅛ in. rolled plate	" "	1	3½
¼ in. rough rolled or cast plate	" "	1	4½
¼ in. wired cast plate	" "	1	9½

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	6
Knotting and priming	" "	1	0
Plain painting 1 coat	" "	1	6
Do. 2 coats	" "	2	4
Do. 3 coats	" "	3	2
Do. 4 coats	" "	4	0
Graining	" "	3	0
Varnishing twice	" "	2	6
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	2	0
Wax polishing	per foot sup.	0	11
French polishing	" "	1	9
Preparing for and hanging paper	per piece	2/- to 5/-	

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ASHTON-IN-MAKERFIELD.—Plans passed: Alteration to premises at Bryn, for the Park-lane Co-operative Society, Ltd.; conveniences, etc., Potter's-row, Bryn-road, for the Garswood Coal and Iron Co., Ltd.; additions to the Bryn Hall Hotel, Bamfurlong, for Mr. W. A. Lloyd.

BATLEY.—Plans passed: Messrs. Newsome, West & Co., Staincliffe, extension of weaving sheds; Mr. W. J. Ineson, rag merchant, new store sheds at Well-lane; Mr. J. E. Fozard, additions and alterations at Purlwell Mills; Messrs. Thomas Carr, Ltd., Highfield Mills, fire staircase and conveniences; London Joint City & Midland Bank, conversion of shop premises at Town-street, Batley Carr, into branch bank; Messrs. G. H. Wright, Ltd., additions to Dale-street Mills; Messrs. F. B. Whiteley, Ltd., Bunker's-lane, rag warehouse; Messrs. T. Brook & Sons, Warwick-road motor garage.

BRIDLINGTON.—The application of the T.C. to borrow £2,500 for the erection of 22 bathing bungalows at the southern end of the new Spa has been inquired into by Major Stewart, Inspector under the Minister of Health.

CARLISLE.—The Housing Committee has just accepted tenders, amounting to over £25,000, for the erection of the first instalment of houses, numbering 26, on the Longsowerby site. The Ministry of Health have also approved of a garden city scheme at Stanwix, a suburb of the city, under which Mr. E. J. Hill undertakes to build 74 houses, which will subsequently be taken over by the Corporation. The estimate amounts to £74,000.

CHELMSFORD.—Plans passed by T.C.:—House, Cedar-avenue, for Mr. F. Rison; alteration to "Prospect House," Baddow-road, for Mr. E. G. Rogers; stable and cart shed, Hill-road, for Mr. F. Ward; house, Roxwell-road, for Mr. E. O. P. Thomas; alterations to the "Old Black Boy Inn," Springfield-road, for Messrs. T. D. Ridley & Son.—The T.C. have agreed to sell a piece of land for the Boarded Barns Housing site to Messrs. Christy & Norris for an extension of their works.

CHERTSEY.—The U.D.C. has received an offer from the Weybridge Engineering Co. to lend them £50,000 for the erection of 50 houses in the Addlestone district under certain conditions, one of which is that the company shall have first call on all the houses for their employees for 10 years if required. The Council are considering the offer.

DOWLAIS.—It is understood that Guest, Keen and Nettlefolds intend to erect on the Ivor site important ranges of coke ovens for the complete supply of the company's Dowlais works, and electric power station for the works and collieries, and to manufacture all machinery required for use at Dowlais works and collieries. A large area of ground at Ivor is being prepared for the erection of fitting shops.

DUDLEY.—Plans passed: Cattle sheds, Wolverhampton-street, for Mr. J. E. Turner; new shop front, Wolverhampton-street, for Mr. J. E. Turner; alterations to warehouse, High-street, for Messrs. Preece & Co.; stable and shed, Cradley-road, for Mr. J. Guest; 4 shops and workshops, New-street, for Mr. H. Richardson; addition to shop, Hill-street, for Mr. H. Smith; shedding, inhedge, for Messrs. J. Hanson & Sons; sanitary conveniences, "Waggon and Horses" Public House, Scott's Green, for Messrs. The Wolverhampton and Dudley Breweries, Ltd.; alterations to Bank, High-street, for the National and Provincial Bank; bridge, Canal-street, Hart's Hill for Messrs. The Hart's Hill Iron Co.; alterations to warehouse, corner of Union-street and King-street, for Messrs. Builder & Sons; spectators' stand, football field, Dudley Wood-road, for Mr. C. Bloomer; extension to printing works, Priory-street, for Mr. R. Hudson; extension to garage, Walford-street, for Mr. W. Barnett; church club and hall, King-street, for the Rev. A. H. Phelips; new stores and workshop, 61, Upper-street, for Mr. W. Shuttleworth; extensions to works, Churchfield-street, for Mr. Charles Wright; proposed enamelling shop, Charlotte-street, for Messrs. The Co-operative Wholesale Society, Ltd., subject to an undertaking not to employ more than 4 skilled bricklayers on such work; and private works extension, King-street Passage, for Messrs. Willetts Adshead, Ltd.

EAST HAM.—Plans passed: saw mills, Barking-road, for Messrs. Austins, Ltd.; additions, 52, High-street, North for Mr. S. H. Lawford.

EXETER.—Shareholders of the Victoria Hall, Exeter, adopted the recommendations of the directors with regard to the rebuilding of the hall, which was practically destroyed by fire. Mr. S. Clough, whose plans were selected by the assessor, Sir A. Brumwell Thomas, attended and explained the scheme.

FULHAM.—Drainage plans passed by B.C.:—At Stamford Bridge ground, for Mr. J. Meras; at Van den Bergh's factory, Townmead-road, for Mr. W. N. Wright; at 187 and 189, Fulham Palace-road, for Messrs. J. Falkner & Sons; at Lady Margaret School, Parson's Green, for Messrs. E. Pollard & Co.

GLOSSOP.—Contracts have been entered into with local builders for the erection of 48 new houses—viz., 16 in Sheffield-road, 16 in Simmondley-lane, and 16 in New Shaw-lane.

HASLINGDEN.—Plans passed for T.C.: motor and transformer house for Messrs. L. Whitaker & Sons, Ltd., at Spring Vale Mill; storeroom and scullery for Miss Parkinson, Syke Post Office; conversion of a farm-house into a dwelling-house at Clough Barn, Helmshore, by Mr. O. W. Porritt, J.P.; additions, 1, Peel-street, for Mr. R. Hoyle.

HULL.—Plans passed by T.C.:—N. Numby, one house, Hessel-road; British Oil & Cake Garden Village, Ltd., 12 houses, New Garden Village, Holderness-road; Mrs. A. Able, house, Newland Park; Reader & Bailey, two houses, Newland Park; Universal Oil Co., timber house, Oak-road, Newland; Mrs. Kebby, house, Newland Park; J. Good, house, Newland Park; British Oil & Cake Mills, Ltd., workshop, Wincolmlee; W. Platt, additions, 255, Holderness-road; Exors. of —. Simms, additions, 79, Prince's-avenue; Hull Oil Manufacturing Co., office additions, West Carr-lane, Stoneferry; Moon & Co., shed, Clarence-street; C. A. Hill & Co., garage, Ravenstreet; Walkers, Parker & Co., Ltd., additions, Myton-place; C. M. North & Co., alterations, Prospect-place, Hedon-road; Brown & Wilson, additions, 129, Edinburgh-street; J. S. Torr, shed, Huzzards-yard, Salthouse-lane; Lattimer & Co., workshop, 45, Lambert-street; W. Platt, additions, 255, Holderness-road; Stewart & Craig, petrol store, Hedon-road; Moors' & Robson's Breweries, Ltd., alterations, "Rodney Arms," Day-street; J. Foster, garage, 658, Holderness-road; G. Hunter, Ltd., additions, Oxford-street; Amos & Smith, Ltd., garage, Neptune-street; Hull Brewery Co., Ltd., alterations, "Grapes Inn," Lime-street, and at "Albert Dock Hotel," Commercial-road; Raines & Porter, Ltd., alterations, Wincolmlee; G. A. Jennison & Co., alterations, Waltham-street; J. Pearce, timber shed and saw mills, Wyke-street; Smart & Elsom, office, Citadel-street and Gore-street; Beecroft & Wightman, shed, Burleigh street; Morrell & Co., Ltd:. garage and offices, Chapel-street and Little Queen-street; E. W. Buckley, additions, 97, Westbourne-avenue; Ouse Shipbuilding Co., Ltd., platers' workshop, Great Union-street; Brown's S.B. & Drydock Co., Ltd., additions, Lime-street; British Oil & Cake Mills, Ltd., box factory, offices, and milk ripening house, and laboratory, Foster-street, Stoneferry; Webster & Co., additions, Chapel-street and Jameson-street.

LEYTON.—Plans passed: Mr. J. White, offices, mess rooms and lavatories, at Lea Bridge-road; Mr. R. C. Guy, 18 houses at Whipps Cross-road, and 12 houses at Teesdale-road; Mr. G. Tufnell, new factory buildings at 486, High-road, Leytonstone; Mr. C. J. Sherwood, workshop at 865, High-road, Leytonstone; Mr. L. Hall, additions at 8, Harrow-road; Underwood Manufacturing Co., additions, Grove House, Lindley-road.

MELTON.—Plans passed by R.D.C.: Two houses at Long Clawson, for Mr. T. Buxton; conversion of house into two cottages, at Cold Overton, for Mr. J. Montagu; bungalow at Stathern, for Mr. W. H. Braithwaite; two cottages at Nether Broughton, for Messrs. Thompson & Son.

PLYMOUTH.—Plans passed: Mr. B. Pooley, addition to dwelling house, 2, Sea View-avenue, Plymouth; Mr. Dunstan, addition, 25, Victoria-road, St. Budeaux; Anglo-American Oil Co., garage, Cattedown; Mr. A. Searle, six dwelling houses, Agation-road; Mr. E. Goldman, garage and stores, Lambert-street, Devonport; Dr. Vellacott, garage rear of 3, Windsor Villas; The Mac Fisheries, Ltd., shop alterations, 2 and 4, Edrington-street, Plymouth; The P. H. Trust, Ltd., addition, Albion Hotel, Plymouth.

RIPLEY.—The U.D.C. have acquired land for a further 50 houses, completing their needs of a total of 120.

SOUTHWARK.—Drainage plans passed by B.C.: Major Conley to "Fortune of War," Walworth-road; Trinity Corporation to 58, Trinity-square; Messrs. Crescens Robinson & Co., to factory rear of 67, Newington-causeway; Messrs. Watney, Combe & Reid, Ltd., to "Fountain" public-house, 43, Camberwell-road; Mr. S. Seal, to 57, Newington-causeway; London County Council to Headquarters, Fire Brigade, Southwark Bridge-road.

STOURBRIDGE.—The T.C. have decided to take all the necessary steps for the erection of 171 houses on the Grange Estate, recently purchased by them, and have approved plans presented by Mr. F. Woodward, the borough surveyor, showing the lay-out of the estate and the details of the proposed houses.

WIGTON.—Bungalow, Anthorn, for Mrs. Glaister, English-street, Carlisle.

FIRES

DONCASTER.—A fire has occurred at Jackson's wood factory, at Arksey, and considerable damage was done.

GLASGOW.—£30,000 damage has been done by fire at the premises of Messrs. Jebb Bros., Ltd., 10–14, Mar-street.

LIVERPOOL.—Damage estimated at £40,000 was the result of a fire at the works of the North-Western Rubber Co., Litherland.

MILLWALL.—The premises of Messrs. J. W. Cook have been destroyed by fire.

Proposed New London Park.

It is announced that Mr. G. L. Moore, of Forest Hill, has decided to provide a public park in London, to be called "Victory Park," at a cost of £150,000. The site has not yet been determined.

* See also our List of Competitions, Contracts, &c.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

CHEADLE.—Erection of houses, for the U.D.C.:—
Cheadle site—
(*a*) Mr. J. Hurst (50 houses).... £49,148 14
(*a*) Messrs. Saunders & Torrance (roads and sewers)..... 5,996 7
Weston Coyney site—
(*a*) Mr. J. Walters (46 houses).... £42,563 16
(*a*) Messrs. Saunders & Torrance (roads and sewers)..... 6,949 9 6
(*a*) Based on prices existing June 1, 1920.

CHELMSFORD.—For installation of suction gas plant, at Admiral's Park Waterworks, for the T.C.:—
*Bilbie Hobson & Co..... £503

CHELMSFORD.—Erection of houses, for the T.C.:—

*Unit Construction Co., Ltd., London—							
20 pairs Type "H1" at	£1,894	4	9	£37,884	15	0	
24 " "K" at	1,894	8	1½	45,456	15	0	
20 " "L" at	1,767	4	5	35,344	8	4	
Total (128 houses) ..				£118,685	18	4	
*G. J. Hawkes & Sons, Chelmsford—							
1 pair Type "H1"				£1,897	10	0	
Griggs & Son, Cubitt Town—							
20 pairs Type "H1" at	£2,179	3	8	£43,583	13	4	
24 " "K" at	2,200	15	3	52,818	6	0	
20 " "L" at	2,075	4	3	41,504	5	0	
Total (128 houses) ..				£137,906	4	4	
F. J. French, Chelmsford—							
6 pairs Type "H1" at	£2,006	0	0	£12,036	0	0	
6 " "K" at	1,985	0	0	11,910	0	0	
6 " "L" at	1,891	0	0	11,346	0	0	
Total (36 houses) ..				£35,292	0	0	

DEWSBURY.—Erection of houses, for the T.C.:—
*Dewsbury Federation of Building Trades Employers—114 houses at £106,880, and 50 houses at £46,380.

DINGWALL.—For the erection of Type "C2" houses, for the B.C. Messrs. Mackenzie & Macdonald architects, Dingwall:—

Mason and Brick Work.	per pair.			Total.		
Mackenzie & MacLean, Dingwall (6 pairs) ..	£933	8	1	£5,600	8	6
D. MacDonald, Beauly (5 pairs)	933	8	1	4,667	0	5
Carpenter and Joiner.						
Alex. MacKenzie, Muir-of-Ord (8 pairs).....	637	10	10	5,127	16	8
Extra for preliminary work	27	10	0			
Fraser & Campbell, Dingwall (3 pairs).....	637	10	10	1,940	2	6
Extra for preliminary work	27	10	0			
Slater.						
MacSwayde & Fraser, Dingwall (11 pairs).....	85	1	2	935	12	10
Lath and Plaster.						
Rod. Ross & Son, Dingwall (6 pairs).....	142	10	3	857	15	6
George MacKay & Son, Dingwall (5 pairs)....	142	10	3	714	16	3
Plumber.						
Fraser & MacDonald, Dingwall (11 pairs).....	205	6	4	2,258	9	8
Painter and Glazier.						
Hugh A. Ross & Son, Dingwall (11 pairs).....	64	5	3	706	17	9
Electric Lighting.						
Finlayson & Fraser, Dingwall (11 pairs).....	23	12	1	259	12	11
				£23,068	13	0

DONCASTER.—For erection of new buildings at John-street, for the Doncaster Co-operative Society:—
*W. Mullins & Co..... £7,895

DUDLEY.—For four pairs of Class A houses on Burnt Tree site, for the T.C.:—
*J. W. Seckerson.... £1,522 0 7 per pair

DUDLEY.—Erection of houses for the T.C.:—
*Netherton Amalgamated Builders ..... £1,622 12 5 per pair

DUFFTOWN.—For the local housing scheme, for the T.C.:—
A. Naughtie, Dufftown—*Mason work.*
Smith & Ritchie, Dufftown—*Carpenter work.*
John Wilson, Dufftown—*Slater work.*
James Fyffe & Son, Aberlour—*Plumber work.*
Hume Bros., Dufftown—*Plasterer work.*
James Brodie & Son, Elgin—*Plasterer work.*
J. Kintrea & Son, Elgin—*Painter work.*
The estimates are for blocks of two houses, and represent £911 11s. 2½d., and £984 12s. 6½d., per house.

HULL.—The T.C. has accepted the following offers from builders for the erection of houses under Section 12 (3) of the Housing Act:—
*G. H. Needler—14 houses at £871 10s. 10d. per house, and £86 1s. for land per house.
*J. F. H. Osborne—15 houses at same price per house, with £98 3s. 6d. for land per house.
*R. W. & J. H. Barnett—16 houses at £871 10s. 10d. per house, and £93 1s. 6d. for land per house.

ISLINGTON.—For erection of 168 flats, including playgrounds, gardens, roads and sewers and communal drying rooms, &c., at Halton-road and Canonbury-villas site, for the B.C. Mr. E. C. P. Monson, P.P.S.A., F.R.I.B.A., Architect to the Council, Finsbury-pavement House, E.C. Quantities by Messrs. Corderoy & Co., 21, Queen Anne's-gate, S.W.1 :—

*Rice & Son, Stockwell..... £171,418

ISLINGTON.—For the erection of 31 flats, including playgrounds, gardens, roads, sewers, &c., at Hazelville-road site, for the B.C. Mr. E. C. P. Monson, P.P.S.A., F.R.I.B.A., Architect to the Council, Finsbury-pavement House, E.C.2 Quantities by Messrs. Corderoy & Co., 21, Queen Anne's-gate, S.W.1 :—

*Thomas Shillitoe, Norwood..... £40,104

KIRKSOWALD.—For war memorial, for Committee of above.—

*Messrs. Fisher & Clementson, Kirkoswald £134

LLANDAFF.—For the construction of 330 lineal yards of 9 in. and 18 in. sewers, for the R.D.C. Mr. J. Holden, A.MInst.C.E., 20, Park-place, Cardiff :—

*F. C. Williams, Cardiff..... £1,292 13

LONDON.—For conversion of lassar baths at Hammersmith Baths, for the B.C. :—

*Tylors (Water & Sanitary), Ltd., York-road	£1,530 16 4
The Gilstone Engineering Co., Ltd., S.W.1	1,534 10 6
A. Heywood, W.6.....	1,609 8 10
John Bolding & Sons, Ltd., W.1	1,699 16 8
Davis Bennett & Co., S.W.1..	1,866 14 0
Geo. Jennings & Co., Lambeth	1,899 0 0
B. Finch & Co., Ltd., S.E.1..	1,981 3 6

LONDON.—Supply of steel bookshelving for library for the Islington B.C. :—

*W. Lucy & Co..... £406

LONDON.—For erection of disinfecting station for the Hammersmith B.C. :—

*John McManus, Ltd., Hammersmith	£3,945
W. Walkerdyne, Ltd., Kensington..	4,500
T. Pearce, Balham—7½ per cent. upon and plus estimated prime cost of	5,700

LONDON.—For works at schools, for the London C.C. :—

*Brightside Foundry & Engineering Co.—Boiler at Boundary-lane School, Camberwell	£295
*Ditto—Heating at Hitherfield-road School, Streatham	662
*W. G. Cannon & Sons—Heating, Keeton's-road School, Rotherhithe	224

LONDON.—Erection of 18 houses at Charlton, for the Greenwich B.C. :—

*W. J. Maddison..... £17,347

LONDON.—For painting work at schools, for the London County Council; :—

*Finch & Finch—Abbotshall-road, Lewisham, E.	£485 0 0
*G. Butters — Approach-road, Bethnal-green, N.E.	386 14 0
*Crowley & Dawe—Ashburnham school, Chelsea.....	875 0 0
*Stevens & Sons—Barnsbury Central School, Islington, S.	208 0 0
*Triggs & Co.—Basnett-road, Battersea, S.	503 0 0
*C. P. Roberts & Co.—Bay-street, Hackney, C.....	358 0 0
*R. Woollaston & Co.—Brewhouse, Whitechapel, St. George's	464 14 0
*Harrison & Co.—Capland-street, St. Marylebone	639 0 0
*Vigor & Co. (Poplar), Ltd.—Cayley-street, Limehouse..	933 12 6
*A. H. Inns—The Charles Dickens, Southwark	938 0 0
*The British Renovating Co., Ltd.—Chicksand-street, Whitechapel and St. George's....	683 16 6
*T. Brown & Son—Church-street, Kensington	492 0 0
*W. Lawrence & Son, Ltd.—Compton-street, Finsbury..	477 0 0
*Lister & Co. (Builders), Ltd.—Cromer-street, St. Pancras, S.E.	409 0 0
*Triggs & Co.—Garratt-lane, Wandsworth, C.....	659 10 0
*Triggs & Co.—Gideon-road, Battersea, S.	649 10 0
*A. H. Inns—The Hugh Myddelton, (Jun.) Finsbury	415 0 0
*H. Groves & Son—Hughes-fields, Greenwich	750 0 0
*W. J. Dixon—Keeton's-road, Rotherhithe	883 16 11
*I. C. Tennant & Co.—Kilburn-lane, Paddington, N.....	798 0 0
*W. Daley & Co.—Milson-road, Hammersmith, S.	433 14 0
*W. Fitch—Ruby-street, Camberwell, W.	879 0 0
*Stevens & Sons—Wilkin-street, St. Pancras, N.....	412 0 0

PLYMOUTH.—For making up (*a*) Hillside-avenue-lane, and (*b*) Endsleigh Park-road, for the T.C. :—

*T. Dovey & Sons,.. (*a*) £671 14s.; (*b*) £2,605 17s.

SALFORD.—For the erection of 701 houses on the basis of actual cost plus fixed profit, for the County Borough of Salford. Mr. C. Swain, architect, 12, Exchange-street, Manchester. Quantities by architect :—

*J. Parkinson & Sons (Blackpool), Ltd., Blackpool—Basic price per house containing parlour, living room, scullery, and three bedrooms, &c. (621 houses)	£900
*J. Parkinson & Sons, ditto—Basic price per house, containing parlour, living room, scullery, and four bedrooms, &c. (80 houses).....	930

SOMERSETSHIRE.—For the construction of roads and sewers, for the Crewkerne U.D.C. Messrs. Worthington, Healey & Grice, architects, 9, Gray's Inn-square, W.C.1 :—

†E. G. Coles, Taunton.....	£5,612 6 9
R. Draper & Son, Crewkerne..	9,105 14 0
Hodson & Son, Nottingham..	8,428 15 0
R. G. Spiller, Chard.....	8,360 0 0

STIRLING.—In connection with the Shiphaugh No. 2 housing scheme, the T.C. has accepted the following tenders: *Building*, B. Reynolds and R. D. Gardiner; *joinery*, Fairful, Wilson & Somers, and Wm. McPherson; *slating*, Milne & Co. (two-thirds) and A. Oswald & Son (one-third); *electricians*, W. & F. Marshall (two-thirds) and Lockhart & McNab (one-third); *painting*, G. Henderson & Son (two-thirds) and J. D. Smith (one-third); *plumbing*, Robert Frater (two-thirds) and D. C. Hardie (one-third); *plastering and rough-cast*, Alex. Walls; *glazing*, Walls & Jamieson.

STOURBRIDGE.—For the erection of pavilions for 150 beds, alterations and additions to premises at Prestwood House. Mr. A. Eaton Painter, architect :—

*Caddick, Son, & Yates, Ltd., Wolverhampton	£34,069
F. J. E. Tooby, Wolverhampton ..	36,798
Thos. Rowbotham & Co., Birmingham	35,977

THATCHAM (BERKS.).—For the erection of eight houses at Thatcham, Berks., for the Newbury R.D.C. Mr. Sydney F. Evershed, architect, Newbury. Quantities by Messrs. Henry Cooper & Sons, Queen Victoria-street, E.C.4 :—

*Messrs. Millson & Sellwood, Thatcham, Berks..... £6,940 15 8

Wages in the Potteries.

A conference of representatives of masters and men in the building trade in the Potteries district has come to an agreement with regard to the wages dispute. The employers offered an increase of 2½d. an hour, bringing the rates to 2s. 2½d. an hour for craftsmen and 1s. 11½d. an hour for labourers, and the establishment of a 44-hour working week, the wages and hours to come into operation as from June 21. This offer was accepted by the men. Above 3,500 operatives were involved in the dispute, and they had given notice that failing a settlement they would declare a strike as from Saturday last.

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